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THE CLINIQUE.

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Original Lectures.

THE CLINIC ON THE THORACIC DISEASES—A RARE AND COMPLEX VALVULAR LESION OF THE HEART.

A CLINICAL LECTURE DELIVERED IN DECEMBER, 1896, AT THE HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF CHICAGO, BY PROF. B. S. ARNULPHY, M. D.

The case I bring before you is something of a cardiac celebrity, and it certainly deserves more than a passing notice. This man is now known as Edward Lewis, and as such has exhibited himself in almost every clinic and dispensary in this country. He was born a Pole, but a Russian subject, and soon found himself a Siberian convict. The sequence is easily seen. In September, 1893, he managed to escape from Saghalien Island, on the eastern coast of Asia. Fifty days and nights he hid in the bush, suffering every privation, until a Japanese coaster came in sight and picked him up, stiff with pain and cold. He was delirious and unconscious for nine weeks, and it took him eleven weeks more to recover from what was called an attack of "spotted fever"—probably typhus superinduced by exhaustion. There was but little pain left in his limbs when he came to—he was then in a Chinese port—but he suffered from a grasping pain at the lower part of the sternum. He feels that pain occasionally now, upon exertion.

A year after he landed in New York, where he was severely bitten by a bear in a menagerie, in consequence of which he was laid up for ten weeks. Soon afterward, in February, 1894, he took a severe cold, from which cause

his præcordial pain suffered a considerable aggravation. He then consulted a physician connected with the Medical International Missionary Association, who discovered the pitiable condition of his heart, and had him taken to St. Luke's Hospital, New York, where he says he was quite ill for weeks, with a high temperature. There it was that a local Esculapius bethought himself of applying to the diseased spot a powerful caustic, which besides inflicting an open and painful sore for weeks, exposed the patient to the inroads of septicæmia and left behind the large scar that you see below the nipple, a monument of asinine and cruel therapeutics worthy of the dark ages.

Edward left the hospital in April, and came to Chicago. In September, 1895, he went to the Rush dispensary, where his condition was observed and studied; then came to our clinic several times, where the class of '95 had ample opportunity to examine him; and he has been roaming all over the country ever since. Here he is again to-day, and I am glad to say that I find him much better than last year. Edward, however, informs me that he has carefully avoided following any of the many prescriptions that have been poured over his devoted head. Instructed by dire experience he has grown skeptical, and no wonder. In the course of his clinical peregrinations he has gathered, in the way of medical certificates, a most bewildering array of learned opinions as to the nature of his cardiac ailment. It perhaps would be instructive, and certainly amusing, to peruse and discuss them; but we must forego the entertainment for the sake of brevity.

Whatever may be the disparity of view regarding the actual organic changes incurred by the valvular apparatus of the heart, there can only be one opinion as to the etiology, it being all chargeable to a high degree of endocarditis, developed in the course of frightful exposure Edward suffered at the time of his escape, culminating in the "spotted fever" already referred to. There is evidence that the endocarditic process involved both the orifices of the left ventricle and the corresponding valves, with subsequent marked hypertrophic development of both ventricles. I am also inclined to think that the patient experienced a fresh exacerbation of endocarditis during his stay in the New York hospital. In the course of a chronic endocarditis such exacerbations are always possible and to be dreaded, especially when the low burning embers of the primary attack are not completely extinguished.

Now look at the patient's chest. You at once detect a pretty extensive area of undulation occupying the fifth and sixth interspaces and extending toward the epigastrium. Applying my hand over that region I feel a widely diffused impulse, not violent nor jerky, but steady, rhythmic, and accompanied by a noticeable heaving sensation. This is characteristic of cardiac hypertrophy, and excludes at once the idea of dilatation, while it bespeaks a settled condition

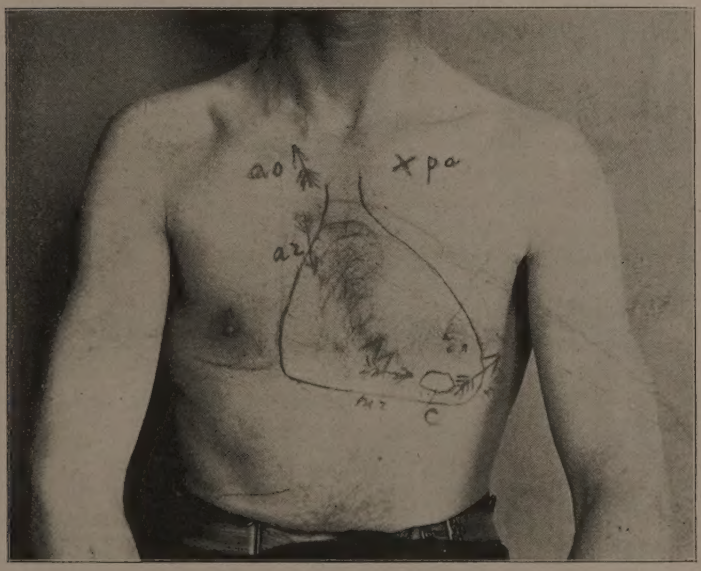


FIG. 1.

of compensatory development on the part of the cardiac muscle. This hypertrophy, which we must consider as a salutary thing, was far from being so well marked when I first examined this patient one year ago. This also explains why he feels so much better now.

The apex beat is easily located in the sixth interspace, and is, as you may see, much displaced downward and to the left. Here I have traced for you over the chest the area

of relative dullness of the heart, and you see how wide it is, revealing from its very shape and size an enlargement of the whole cardiac mass, auricles and large vessels included. (See Fig. 1).

Now, if you look at the cervical region, you will have no trouble in detecting a rhythmic throbbing; it is purely arterial, no doubt; what I mean is, there is no sign of venous congestion in sight; the jugular veins are almost invisible. When I lay my finger over the throbbing carotids I feel a slight purring sensation, systolic in character. By the way, there is also some distinct systolic purring to be felt about the region of the apex. We have not auscultated the patient yet, and still I claim that with the diagnostic elements gathered from inspection, palpation and percussion we ought to be able to make a pretty correct diagnosis of the valvular lesions present.

That there is some kind of valvular lesion, we know, *ipso facto*, from the unusual size of the heart; that some mitral lesion is present we may safely infer from the apical purring conjoined with the hypertrophy of the right ventricle, which percussion has rendered obvious, while your fingers can feel it pulsating in the epigastrium. That some stenosis of the aortic orifice is lurking there is made apparent by the systolic purr of the carotids, while the arterial throb at the neck is an open confession of aortic regurgitation.

Let us therefore proceed with auscultation, as a final test by which our inferences shall stand or fall. Over the apex I perceive a loud systolic murmur, of a peculiar chirping character. This murmur is perceived over a wide area, as I can trace it to the ensiform cartilage on the right, while to the left it clearly propagates upward into the axillary region, and I find it well marked at the angle of the left scapula. We have therefore a classical murmur of mitral insufficiency. By way of confirmation it is always well to ascertain the character of the pulmonic recoil. Well, I find that recoil very much intensified; I want you to verify that important point for your-

selves when your turn comes for examination. It is the sudden and forcible clapping together of the pulmonic cusps that generates the clear, loud vibrating sound perceived to the left of the sternum, in the second interspace.

How different are the acoustic phenomena over the symmetrical region on the other side of the sternum. Here the aortic clapping is almost entirely lost, and in its stead we hear two murmurs, following each other; first a somewhat rough systolic *souffle*, succeeded immediately by a soft diastolic murmur, of an aspiratory character, propagated downward along the sternum.

The stethoscope reveals a double murmur in the carotids and the sub-clavians, the systolic being predominant. You will please notice that I only use the stethoscope for the study of the vascular murmurs, the plain ear being sufficient, in fact preferable for the detection and correct appreciation of all pulmonary or cardiac auscultatory signs.

Auscultation therefore has simply furnished confirmation of the diagnostic inferences derived from other methods of observation. The process is excellent, I can assure you; put it into practice whenever you can. It certainly develops the mental acumen, the logical powers, the clinical instinct of the observer. A time will come, when after years of practice and study, from a single sign, from an objective appearance, immediately apprehended, such as cervical throbbing, or a peculiar coloration of the face, or a slight protrusion of the eyeballs, or the attitude of the patient, his mode of breathing, the aspect of his hands, the behavior of the pulse, the look of his eye, you will be able to form an instantaneous diagnosis. Moreover let me tell you that there is more of man than can be seen with our physiological eye, and that the day is drawing near when we will be able to gauge health and disease with yet unknown methods of perception.

But let us complete our physical examination of this patient. The lungs seem normal; I discover no sign of pulmonary congestion, which shows how well the compensation is established. The liver, as you see, is within his

limits; and the spleen is slightly enlarged, and no wonder, but not from passive congestion. The urinary secretion is normal, the appetite good, the general strength satisfactory. The only thing that Edward complains of is his inability to perform any work, as exertion is sure to bring about dyspnœa and pain. Sometimes there also develops palpitation, accompanied by dizziness. This last symptom belongs to the aortic part of his trouble. Last year when the compensatory hypertrophy was not so well established he suffered frequently from terrible spells of pain, palpitation, dizziness and insomnia. I gave him naja trip. at the time, and he says it certainly helped him very much.

Naja acts upon the pneumogastric, which as you know, is the trophic nerve of the heart. Naja promotes and preserves the work of compensation. Hence its great importance in the management of valvular affections.

Now, as to the diagnosis, I will formulate it as you would yourselves after what I have just said: *Mitral insufficiency plus aortic stenosis and regurgitation.* Nothing more, nothing less, and it is quite enough. He offers a remarkable case of a complex or combined valve lesion. We frequently find mitral insufficiency more or less complicated with stenosis, or vice versa; likewise do we find aortic insufficiency more or less blended with stenosis; but it is rare to find united on the same subject a mitral and an aortic lesion. There are cases in which a valve lesion will follow another valve lesion with marked relief in the symptoms. This happens for instance, when in the course of an aortic stenosis, the excessive intra-ventricular pressure seeks relief in the direction of the mitral valve, bringing about a dilatation of the mitral orifice, through which part of the contents of the ventricle may escape during systole; the dilated orifice thus playing the part of a safety valve. Traube reports a case of aortic difficulty attended with the symptoms of angina pectoris, in which marked relief followed the establishment of an insufficiency of the mitral valve. In fact the students of cardiac pathology are pretty well agreed nowadays on this curious

point of practice, that in the course of an aortic affection attended with marked arterial tension, the advent of a mitral regurgitant murmur is more to be welcomed than to be dreaded.

Therefore the association of valve lesions which Edward presents for our study is not in itself a bad one from a prognostic point of view. You of course realize that in his particular case, the two valve lesions have developed contemporaneously, arising from the same infection of the endocardium.

The pulse, as you know, is the best clinical exponent of the general circulation of the cardiac patients. Now, this might pass for a pretty good ordinary pulse, it betrays no weakness, no irregularity. I find in it neither the smallness of mitral insufficiency nor the wiriness of aortic stenosis, nor the jerkiness of aortic insufficiency; there is, as it were, such a happy blending of all these abnormal features, that the resultant thereof appears almost normal.

In all cases of valve lesions wherein the heart has built up an efficient compensatory hypertrophy, the prognosis is really governed by the degree of integrity of the cardiac tissue. You are aware that no heart can come under the blight of endocarditis or pericarditis, without the myocardium being more or less affected thereby. It is all a question of how long the myocardium will retain the integrity of its structure. And this is apparently governed by the nature of the primary inflammatory attack and the degree of intensity of its infective character. Aside from this essential condition much will depend upon the occupation, the bodily and mental habits of the patient, upon his hygienic environment and his diet.

It is well also to bear in mind that in all cases of aortic regurgitation, we must reckon with an element of uncertainty, sudden death by sudden stoppage of the heart in diastole, being a favorite termination of the drama.

I repeat that the management of those cases is mainly hygienic. No active therapeutic intervention is needed. Woe betide the cardiac sufferers falling into the hands of

unscrupulous practitioners, and who lavish digitalis upon them with a free hand! The heart's tenure of office is thus sure to be frightfully curtailed.

I have told you what naja given in moderation can do. It will regulate the trophic function of the vagus. Kali muriaticum will be of service by helping to build the muscular fibre; plumbum, aurum muriaticum will prevent in a measure the connective tissue changes; and phosphorus will oppose the inroad of fatty degeneration.

Finally the judicious use of the arseniate of strychnia will for a long time help the heart to keep up a healthy tone of contraction and face its daily duties with a brave front.

THE "URATIC DIATHESIS."

By ALFRED C. CROFTAN, M. D., ADJUNCT PROFESSOR OF BACTERIOLOGY AND SANITARY SCIENCE IN THE HAHNEMANN MEDICAL COLLEGE, CHICAGO.

During the last five years a series of remarkable discoveries have been published by conscientious investigators, that seem destined to throw light at last upon that large group of affections that we sum up under the name of "uratic" lesions and that begin with lithæmia, and the uratic diathesis, and find their most severe manifestations in articular rheumatism and gout. An enormous confusion prevails as to the true nature and the histogenesis of this pathological family—clinical and scientific observations do not coincide; conflicting theories galore are preached into our suffering ears, and the student arises from a study of the vast literature on this subject, with a feeling of dissatisfaction and an earnest craving for the truth, or at least a semblance of the truth. A careful perusal of the complete current literature on the subject justifies us in pronouncing the following apparently bold sentences that we will attempt to substantiate:

1. Uric acid is a symptom only in the "uric acid diathesis" and plays no etiological role whatever.

2. The increase or decrease of uric acid secretion gives no indication of the severity of the so-called "uric acid intoxication."

3. The symptoms of the "uric acid diathesis" are

due to an auto-intoxication produced by the retention of substances called xanthinbases (see below) and not of uric acid.

4. The fundamental (heredity, idiosyncrasy, reduced vitality) etiological factor in the development of the complex symptoms grouped under the name of "uric acid diathesis" is an increased katabolism of the cell nuclein, notably that of the leucocytes.

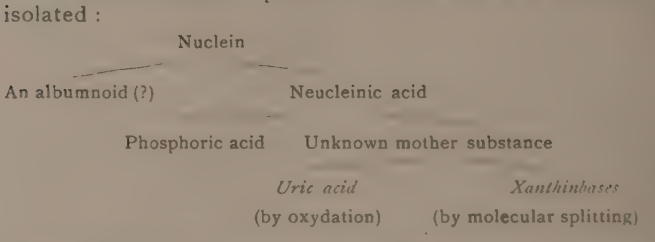
Claude Bernard's classical dictum that every pathological process is simply a perversion of some physiological function, and that in order to understand the former it is absolutely essential to have a clear insight into the nature of the latter, leads us to contemplate by way of introductory the uric acid economy of the healthy organism and to subsequently see in how far, if at all, a perversion of the normal mechanism may be able to produce the pathological conditions described under the name of uratic lesions.

Until very recently the view was universally accepted that uric acids, like other products of tissue-metabolism was a product of the slow oxydation of the albuminoids, forming virtually an intermediate oxydation stage between albumen and urea; its place of origin was looked for wherever in the system albumen was undergoing katabolism in the presence of oxygen. Recent discoveries, however, teach us that certain cells and these cells *alone*, are capable of forming uric acid, and that it is just as irrational to expect f. i. the formation of bile from any other than liver cells as it would be to look for uric acid formation in other tissues than the epithelial cells of the kidney parenchyma; it has further been demonstrated beyond a doubt that the nuclein of the cell nuclei, chiefly of the leucocytes, is the mother substance for the formation of uric acid.

Three factors determine the quantity of uric acid excreted: (1) the abundance of nuclein in a state of katabolism; (2) the integrity of the kidney epithelia; (3) the individual capacity for conversion of the substances to be described below into uric acid, a capacity that varies in each individual, and is directly dependent upon the grade of functional activity that the kidney epithelia possess. It would lead too far were we to discuss the proofs that have been furnished for these three assertions, a few words only will, however, not be out of place about the histo-chemistry of uric acid formation according to newest researches.

In 1881, Kossel[1] showed that when he heated pus for forty hours with water he obtained a series of basic sub-

stances which he called xanthinbases i. e., xanthin, hypoxanthin, kreatinin, kreatin, leucin, tyrosin, and subsequently demonstrated to be derivatives of the nuclein of these pus cells. Horbaczewski[2], a little later showed that the end product of the *oxydation* of *nuclein* was uric acid and *succeeded in isolating a peculiar substance* (of as yet unknown constitution) which when left to itself or subjected to heat alone underwent molecular rearrangement and splitting and converted itself into the xanthinbases of Kossel, but which on oxydation gave uric acid; he also showed that xanthinbases could not be oxydized to uric acid. The following diagram will help to show the mechanism of the chemism he cleared up and the known substances he isolated:



Soon after these discoveries it was found that uric acid was an indifferent non-toxic substance, while the xanthinbases had enormously toxic properties so that the view was soon formulated and proven that *the formation of uric acid is a conservative process of dis-intoxication*, that this purifying is a specific function of the kidney epithelia and that if *their* functional activity be impaired an overflooding of the system with the unconverted mother substance and of xanthinbases occurs, thus producing an auto-intoxication. Therefore *the decrease in the excretion of uric acid in kidney diseases is not due to retention but to nonformation;* by way of corroboration experiments by Fodor[3] of Budapest, showed that in uræmia and in certain nephrites no uric acid is found in the circulating blood, that little uric acid, it is true, is excreted, but that the amount of xanthinbases passed in the urine is correspondingly increased, so that we are entitled to say: If the kidney epithelia are diseased the formation of uric acid is decreased in proportion to the extent of the kidney involvement; xanthinbases are formed from the circulating mother substance instead, without any specific action of kidney cells, but by simple splitting, and an auto-intoxication results. The crowning

proof to these partly theoretical conclusions is furnished by the remarkable experiments of Gaucher[4], who showed that *xanthinbases injected into a healthy body for a long time are capable of producing most of the lesions so characteristic for the uric acid diathesis.*

The pathogenesis of gout must now appear to us in a different light. Ever since Garrod[5] in 1848 showed that uric acid was occasionally found in the blood of gouty patients the view that uric acid was the one and only etiological factor in gout was universally accepted. Objections to this view, based on the varied and conflicting findings continually observed, were raised from time to time, but the old *dogma* was triumphant and is apparently to-day in the minds of the comparatively uninformed. The first to raise serious doubts and to prove the validity of his objections by pathological demonstrations was Virchow[6]. In his celebrated paper on gouty kidney he makes statements to the effect that the deposits of urates so frequently observed in gouty kidney (an interstitial nephritis) have no etiological significance but are a secondary process; he shows, by way of proof, that the characteristic kidney changes take place in the cortex while the uratic deposits are found in the medullary substance; the same he demonstrates for joint affections, viz.: the uratic deposits and the inflammations are localized in different parts of the joint, the deposits being found on the cartilages, the inflammation invariably starting from the synovial membranes; further, in the most violent affections of the joints even when they lead to suppuration, uric acid is never found in the exudate. He concludes from all these observations that uric acid is not the "materia peccans," but that some other toxic substance circulating in the blood stream is capable of producing inflammatory, degenerative and necrotic changes in certain tissues (kidney parenchyma, synovial membranes), thus making them a suitable nidus for the deposit of urates; he strengthens his view by showing the analogy between their mode of deposit and places of predilection of urates and the deposit of calcareous substances in other diseases.

Levison[7] is the author of another valuable paper which helps to throw a great deal of light on the question under discussion. A great similarity had been observed clinically to exist between the manifestations of chronic lead poisoning and of gouty affections. Levison by a large number of autopsies and of animal experiments, succeeded in demon-

strating that articular deposits and arthritis uratica are always accompanied by kidney lesions, and as he proved experimentally as a rule preceded by them; he pronounced the dictum that *granular atrophy of the kidney is a necessary precursor of gouty arthritis.*

The same observer[3] showed conclusively in a later series of investigations that "lead gout" only occurs after marked changes in the kidney, identical in every respect with the granular atrophy of the true gouty kidney have been induced by the chronic lead intoxication. Jaucher[4] finally showed that the long continued injection of increasing doses of the xanthinbases induce kidney, and *secondarily*, arthritic changes that are identical with the lesions of lead poisoning and of true gout!

Thus to sum up the statements of the preceding paragraph, we can say:

1. Uric acid is not the "materia peccans" in producing the articular lesions of gout, but a secondary deposit on a prepared nidus.

2. The true poison in uratic lesions are the xanthinbases which are capable of producing inflammations and degenerations as well in the kidney parenchyma as in the joints.

3. Gouty affections are clinically and pathologically identical with certain forms of chronic lead intoxications and these again are identical with those of chronic xanthinbases poisoning.

4. Kidney lesions always precede articular lesions in chronic lead poisoning. *We are, therefore, justified in deducing that also in chronic xanthin poisoning, i. e., "uratic diathesic" poisoning, the kidney lesion precedes the articular manifestations of the disease with secondary deposit of urates.*

One question remains to be answered, viz., whence does the toxic substance that must be converted into uric acid by the kidney epithelia in order to be rendered harmless, come from?

One source, as we said above, is the desintegration locally or generally of large masses of nuclei, containing cells, as for instance, in the absorption of exudates, hæmatomata, hæmorrhagic extravasations, in hæmophilia, leukæmia, etc., in all of which conditions (as long as the kidney function remains unimpaired!) we find a large increase in the excretion of uric acid. But none of these conditions obtain in the "uric acid diathesis;" the explanation was given when Neusser discovered his "perinuclear

basophile granulations," little pigment garlands around the nuclei of the leucocytes, in the blood of all "uratic" subjects; their presence in the blood is always accompanied by a great increase in the uric acid secretion when the subject has normal kidneys, and in the later stages, when the kidneys, as we shall see, have become affected, of the xanthinbases which are excreted instead. Modern authors basing on the sum of all these findings, agree that *in an increased metabolism of the nuclein of the leucocytes is to be found the key to "uratic lesions," the fundamental vitium of the "uric acid diathesis."* This property, this dyscrasia may be inherited or be acquired from a series of causes that the clinician is familiar with and the discussion of which is beyond the frame of this paper.

Diagnostically, the fluctuations in the quantity of *uric acid* excreted are of course valueless, but the quantity of uric acid *plus* xanthinbases is always increased in even the most masked cases of "uric acid diathesis." This fact (which follows naturally from our above explanations) coupled with the discovery of Neusser's basophile granulations in the white blood cells are of immense diagnostic and prognostic value, as they clinch the diagnosis long before the lesions are clinically to be recognized, and before those irreparable tissue changes have occurred that necessarily baffle all treatment.

The pathogenesis of uratic lesions based on the above résumé would read as follows:

Normally the katabolism of the nuclein of the leucocytes floods the blood with a toxic substance (the mother substance above), which is normally converted into uric acid by the kidney epithelia, rendered harmless and excreted; an excessive katabolism of nuclein in the course of time overtaxes this dis-intoxicating function of the kidney and produces progressively increasing functional derangement of those excreting glands, a derangement which is augmented by the steadily increasing acidulation of the blood by phosphoric acid (see diagram above) and possibly too by nervous influences. As the kidney function becomes impaired uric acid is no longer formed in so large quantities but the excretion and also retention of xanthinbases is correspondingly increased with all the consequences that were elaborately discussed above and that constitute in their totality the symptom complex of lithæmia "uratic diathesis," gout, etc.

Therapeutically two things must be aimed at, viz.: 1.

A remedy should be sought for that would prevent excessive katabolism of cell nuclein (a remedy which will accomplish this has not yet been discovered.) 2. The kidney function must be supported. Generally speaking, of course, the measures that have been empirically found and that are being employed *notwithstanding the direct contra-indication that old uratic disease theories have always presented*, must be continued, notably the administration of alkaline waters (which would have a tendency also to neutralize the phosphoric acid in the blood!) and a rational diet. Violent exercise and all agencies that would produce a leucocytosis must be carefully avoided. Theoretically, if we combine the laws of homœopathy and the pathological and clinical findings described, plumbum would be the best similimum, while a combination of the laws of artificial immunity and the pathological conditions we have recognized would induce us to try the effect of steadily increasing doses of the xanthinbases as a remedy for "uratic" lesions.

We lay claim to nothing original in this paper; we have simply gathered the material that lies scattered in the archives of old world medical libraries, and have attempted to logically trace from the facts presented the *circulus vitiosus* that begins with an imperceptible dyscrasia and terminates in destructive tissue changes.

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A CLINICAL VIEW OF RHUS TOXICODENDRON.

By CHARLES H. EVANS, M. D., ADJUNCT PROFESSOR OF MATERIA MEDICA AND THE INSTITUTES OF MEDICINE IN THE HAHNEMANN MEDICAL COLLEGE OF CHICAGO.

The texture for which rhus toxicodendron manifests the strongest preference is fibrous tissue, such as ligament cartilage, fascia, tendon, periosteum, sheath of nerves and connective tissue in any and all parts of the body, inducing a similar state to that caused by sprain, wrenching, wrestling, overlifting, and also that sub inflammatory condition produced in the same structures when one has been drenched with rain, especially while the skin was warm or perspiring.

It is almost unnecessary to emphasize the fact that a large number of ailments must arise from the foregoing causes, it is a matter of frequent occurrence, indeed our literature abounds with warm recommendations for this drug in the treatment of such disorders, and our periodicals teem with narratives of cases in which its use has justified all expectations.

When the anatomical range of fibrous tissue is considered, how widely it is distributed throughout tbe body it is not surprising that the effect of rhus is demonstrated in so many situations or that disorders in different organs developing from some previous strain, wrench or fall should find relief from the administration of this drug. The action of rhus for the consequences of mechanical injury is both immediate and remote.

In this connection it may not be amiss to note the beneficial effect of rhus in that form of cardiac disease known as uncomplicated hypertrophy, which is suggestive of its use in the bicycle epidemics that we are now passing through; "century rides," long continued racing at high speed, "scorching," efforts on the part of professionals to "break records" (or their own necks) and attempts by amateurs to make good records, all accomplished in a bent and constrained position of the body cannot fail to produce severe tension of fibrous valves and chordæ, while hypertrophied walls become necessary in order to overcome increased resistance at the various orifices of the heart. The same pathological condition is present in athletes and persons who habitually have to lift heavy weights. In all these cases besides abstinence from the vicious habit the use of

the remedy must be persevered in for a considerable length of time.

From its specific influence upon fibrous tissue rhus has proved of inestimable value in the treatment of rheumatism. In the course of voluntary and involuntary provings the symptoms of acute and chronic rheumatism have been unmistakably developed and our literature has supplied testimony of permanent cures,

Thick as leaves in Valambrosa.

Should the mind of the prescriber consider all varieties of the pathological state included under the term rheumatism as identical, the empiric use of rhus will be attended by many and mortifying failures. Success in the employment of this drug is only attainable by differentiating the variety to which it is homœopathic, and this is equally true of all the other "anti-rheumatics."

Anatomically, it is seen to be chiefly useful in localities where fibrous tissue prevails, namely, in and about the joints, broad fascia, insertion of tendons, tendinous expansions, aponeuroses, intermuscular septa, nerve sheaths, etc. Clinically, it is distinguished by the fact that the rheumatism to which it is adapted is a mixture of nervous and painful elements, and is relieved by continuous motion. This clinical combination of these two essential features has been admirably summed up by the late Dr. Dunham, who said: "The rheumatic symptoms of the drug commence with severity during repose, and they continue to increase as long as the patient remains quiet, until, at length, their severity compels him to move. Now on first attempting to move he finds himself very stiff, and the first movements are exceedingly painful; but as he continues to move, however, the stiffness and the pain are decidedly decreased, and he feels much better. After a time, however, the patient is compelled from a sense of weakness or exhaustion to cease moving about and to rest. The relief then experienced is from the feeling of prostration, not from the pain, which soon asserts itself again, and increases to such severity that the patient is obliged to move about once more."

The greatest rigidity and pain are experienced by the patient when first moving his joints after these have been resting for some time during the day, or when the first attempt is made to move when rising from bed in the morning, with partial relief from continuous movement. An indication for the use of rhus in rheumatism is the

barometric one of the patient having been thoroughly wetted during a rain storm, especially if he had been warm and perspiring at the time, and furthermore he is subject to an increase of pain and stiffness in succeeding years at the approach of stormy weather or when there is a continuance of damp or rainy weather. Another causal indication for the use of this drug consists in the fact that rheumatism has been induced by the person having lain upon damp or wet ground. A form of rheumatic paralysis to which rhus is adapted has been contracted by the perspiring subject having sat for some time upon cold surfaces or stone doorsteps. In such cases the fibrous sheath of the great sciatic is more or less severely implicated.

The skin is a tissue upon which rhus expends decided energy. The form of dermatitis to which it is adapted is marked by a dull red hue in somewhat irregular patches, and elevated above the surface. Upon this reddened base numerous vesicles filled with a clear, watery fluid arise. They are about the size of the head of a pin, very thickly set, and as a general rule remain isolated, though in some places a few coalesce in consequence of their immediate proximity. During the continuance of this eruption the local heat and itching are almost unbearable, and when the vesicles have been ruptured by scratching, the escaping fluid excites an extension of the inflammation, and may be propagated by manual transference to new localities. It will readily be appreciated that vesicular erysipelas and vesicular scarlet fever are within the sphere of this remedy, and should there also be present a typhoid state the clinical picture is complete.

At a later stage the contents of the vesicles become milky or sero-purulent and desquamation follows. The attendant œdematous inflammation may extend to the (fibrous) cellular tissue of the skin becoming phlegmonous, resulting in the formation of subcutaneous abscess; even in this stage the dull redness of rhus is preserved. The influence of rhus upon the glandular and lymphatic system renders it of service in the scrofulous constitution, a part of which is manifested on the skin. The pathogenesis of and clinical experience with the drug under consideration shows it capable of controlling both the systemic and local disease.

Eczema is therefore frequently cured by this remedy. It may declare itself in any situation, but its character is the same at whatever site it appears. When the scalp or

face or both these localities are invaded it constitutes crusta lactea, popularly "milk crust," in which the surface of the head or face is more or less denuded of epidermis, presenting a "raw" appearance, the stubble-like hair looking as if it had been mowed off with a scythe. The "raw" surface exudes a serous or sero-purulent fluid which dries into an extensive moist greenish and offensive scab, that is reproduced whenever it is removed. Other favorite localities are the corners of the mouth, the adjacent surfaces of the scrotum and the thigh, or the labia and the thigh and downward along the inner femoral region, though it is by no means confined to the foregoing localities.

As before stated, the scrofulous constitution with its susceptible lymphatic and glandular system is within the clinical grasp of rhus. Inflammation of the parotid gland, especially when it has been aroused by an attack of scarlet fever is controlled by this drug.

In numerous instances the (fibrous) connective tissue of the neck participates in the inflammatory process even when the parotitis has progressed to the stage of suppuration it is still serviceable and places the gland in a more healthful state for the action of other anti-purulent remedies. The parotids, together with the sub-maxillaries and sub-linguals are the seat of a form of inflammation that results in salivation that is sometimes sanguineous in character for which rhus is often appropriate. The axillary and the inguinal glands, and the anterior and posterior cervical glands are also the seat of an inflammation which sometimes includes the surrounding (fibrous) cellular tissue. The involvement of gland structure manifested in the course of typhoid fever during which the solitary and agminated glands (Peyer's patches) become inflamed, necrosed and ulcerated, show the remarkable curative influence of rhus in typhoid fever to be founded on a strict pathological basis. In typhoid fever rhus is one of our most frequently indicated and reliable remedies. Not only is this true of enteric fever proper, but this drug exerts a curative influence upon the low adynamic state incident to various diseases, eruptive, pulmonary and abdominal.

The delirious state present in typhoid fever when rhus is indicated is not of a violent character, but assumes instead a mild type during the continuance of which the patient lies day after day in an unconscious state, constantly muttering to himself, absorbed in the contempla-

tion of objects which have no present existence, picking the bed clothes and catching at imaginary objects in the air. In his delirium he is far away from home out in the open country or in unknown streets and has traveled a long and wearisome journey, but has still a great distance to go, or he is laboriously wading through deep sand or snow to reach his destination which will yet require a long time. At times he believes he is being hindered in his way by evil disposed persons and in his attempts to escape from them springs in terror out of his bed. Or it may be that he is attempting some task that has occupied him for a long time and which he is still unable to accomplish. An almost constant restlessness is present in such cases and he tosses about from one side of the bed to the other, resting but a short time in one position and then commencing again; sometimes he sits up and then lies down only to turn and turn again. The tongue is dry, brown and rough, and a red triangle is observed at the tip; the base of this triangle is situated at the anterior border and the sides and apex extends backward along the dorsum almost to the centre of the tongue. Sordes gather on the lips, teeth and gums, and discharges from the bowels are thin, watery, often involuntary, and in appearance have been compared to pea soup or otter's fur. The urine dribbles away without knowledge of the patient, is dark in color and very strong in odor. Cough is present and accompanied with expectoration of rust colored mucus The patient winces when firm pressure is made over the ileo-cæcal region.

It should be remembered that the foregoing are not all the symptoms of typhoid fever, nor are they all necessarily present in any one case of that disease; they do, however, represent the clinical scope of rhus in typhoid fever.

In intermittent fever rhus is curative when the paroxysm is most apt to recur in the evening. The chill is accompanied with yawning and an almost spasmodic stretching of the limbs attended with pain in the muscles. The chills have an irregular or mixed character, coldness being present in some parts of the body, while there is heat in others or an external coldness develops with a feeling of internal heat; in some cases a greater degree of coldness is experienced on the left side of the body at extremities; the stage of chill is attended with an almost constant dry, irritating cough. The onset of fever is attended by the presence upon the skin of an eruption of urticaria. The reddened patches, wheals and burning itching developing

in several localities at the same time. The characteristic restlessness of rhus also becomes apparent in this stage, though it may exist to a certain extent in the cold stage. The sweating stage makes its appearance after midnight or in the early morning hours, is very profuse and continues a long time. Diarrhœa, colic and digestive disturbances attend the form of intermittent to which rhus is adapted and herpes assert themselves at the corners of the mouth.

Notwithstanding its array of gastric symptoms, the influence of rhus upon the digestive organs is not sufficiently appreciated. They represent a disorder known as atonic dyspepsia, other remedies than rhus being better adapted to acute gastroses. The resemblance of rhus to the before mentioned condition of the stomach is quite apparent, the soft, flabby, scallop edged tongue taking the imprint of the teeth, bitter or putrid taste in the mouth, eructations, fullness, weight and pain after eating, unnatural appetite, alternating with loss of desire, nausea after eating, colic, diarrhœa, together with many other pathogenetic symptoms of like character, amply confirmed by clinical experience. Rhus is capable of influencing catarrhal inflammations in each and every part of the body; this is to be expected from its well-known affinity for glandular structure, and why it is so useful in the scrofulous constitution. The sub-mucous cellular tissue is more or less invaded, and inflammation and extensive ulceration are the consequence, while sero-purulent or blood streaked mucus is discharged from all outlets of the body. This is especially true of the nasal cavities and the intestine, manifested in the latter situation by a severe form of dysentery in which the discharges consist of yellow mucus, blood streaked mucus or jelly-like bloody masses, attended with intense colic pains extending downward into the thighs (sciatic) making it an impossibility for the patient to rise from the stool. Rhus is one of the remedies recommended in the medical treatment of appendicitis. The pulmonary tract is also invaded by catarrhal inflammation and we find rhus to be a controlling agent in the rheumatic form of laryngitis, bronchitis, etc., expectoration having the same character assumed by mucous discharges elsewhere, namely, sero-purulent or blood streaked. These, with other thoracic and abdominal diseases may assume an adynamic type.

The eyes and their appendages are sometimes the seat

of intense inflammation in which the skin is dull red, the characteristic color of rhus. The eyelids are so greatly distended with exudation that they become enormously convex, quite hemispherical in form, and constantly closed. The conjunctiva is so greatly inflamed and swollen that it is forced between the edges of the lids and looks like raw meat. It is exceedingly difficult to examine such eyes. When the eyelids are separated by the fingers a gush of serum or sero-purulent fluid pours out and streams down the cheek; but in the majority of instances this free discharge does not permit the eye to be seen for the conjunctiva is so greatly swollen that its folds entirely cover the eyeball. Pin head vesicles (phlyctenules) form upon the cornea, ulcers denude its surface and there is attendant keratitis.

Scrofulous ophthalmia with its intense photophobia during the continuance of which inflammation the sufferer lies for weeks with his head buried in a pillow, often finds relief from rhus not only locally but in consequence of the favorable influence this drug exerts upon the strumous constitution.

A GOOD MEDICAL CREED.—"I am uncertain whether I ought to add that I believe in the homœopathic system of therapeutics. I am often told by skeptical friends that I hold this belief on a par with the Christian religion, and I am not altogether inclined to deny the sardonic impeachment! When our bodies cease to be drugged into disease and sin, it is my personal impression that our souls will begin to stand a fair chance; perhaps not much before."

ELIZABETH STUART PHELPS in the creed given in her autobiography.

Clinical Society Transactions.

CORNELIA S. STETTLER, M. D., Corresponding Secretary.
ORRIN L. SMITH, M. D., Recording Secretary.

DECEMBER MEETING, 1896.

The regular monthly meeting of this Society was held in the large amphitheatre of the Hahnemann Medical College on Saturday, December 26, at 8.30 P. M. In the absence of the president, Dr. E. M Bruce was called to the chair. The interest felt in the topic for the evening, "*Anæmia in Young Girls*," secured a large attendance, and all were pleased with the

REPORT OF THE SECTION ON THE MEDICAL DISEASES OF WOMEN.

E, S. BAILEY, M. D., Chairman.

I. Cases of anæmia. By Dr. Katherine B. Clapp. —*Case 1.* On the third of September, there came to the office a young woman, twenty-one years of age, unmarried, who desired a remedy for the "*tired* feeling" she experienced all the time. The patient who is of a lively, pleasure loving temperament, a year ago danced every evening for a week at a charity entertainment, and from that time she has not been in good health. The following were the subjective symptoms: Palpitation of the heart when ascending stairs, walking rapidly or wheeling, dizziness when first arising in the morning, and occasionally a sensation of faintness during the day.

The objective symptoms were pallor of the mucous membrane of the mouth, nostrils and eyelids; yellowish white complexion, in fact the face looked ghastly, the ears white without a tinge of pink, as also were the lips. The eyes were clear, bright, with enlarged pupils, and the sclera pearly white. There was no constipation, but the stool were clay colored. The urine was examined by Dr. Kahlke, who returned the following analysis: Urine, slightly acid; specific gravity, 1,014; no sugar nor albumen; the phosphates and chlorides were normal and the urea .006 c. c. of urine.

It is to be regretted that this patient did not have a microscopical examination of the blood. It was the intention to have had it, but like many other good intentions it did not materialize.

Treatment. The patient was instructed to remain in bed for a week. Mercurius dulc. 3x was given three times a day. A case of Londondery lithia water was purchased by the young woman's father and she was urged to drink freely of it. Tea, coffee and meat were prohibited, the diet consisted of an eggnogg every morning, baked apples, oyster and chicken broth, also various kinds of cereals with cream, sugar and fruit.

The second week, the pulse having been reduced from 114 to 90, she was allowed to sit up half of each day. The bowels were moving freely, and the dejections were dark. (I wish by the way to state, this patient during her year's discomfort had lost no flesh, and was as her mother expressed it, a "big eater.") She had been under the care of three old-school physicians, who had given her all sorts of tonics containing iron.

The second prescription was ferrum met. 3x every three hours, with an occasional dose of podophyllum 2x. The pulse became stronger, there was no dizziness, no faintness, and the face lost its ghastly appearance.

In November she declared herself well, and announced her determination to attend a dancing party; she looked well and seemed well.

This case is not presented as an unusual one, but one that is quite common. It was diagnosed as simple anæmia rather than chlorosis, because there was no interference with menstruation, the flow appearing regularly, and normal in quantity, although thin and light colored. There was no leucorrhœa, neither was there any pain. As the patient expressed it, "I have no aches or pains, I am just tired." At no time was there a rise of temperature; and an examination of the heart revealed no abnormal sounds. The urine did not receive a second examination, but it is now deeper in color. There is a family history on the mother's side of Bright's disease. The mother is afflicted with leucoderma.

The following cases are offered by Dr. Bailey:

Case 2. Miss K., aged nineteen, became a patient of mine in July last. I saw her at the door when she ushered me into the house to see her mistress. She was almost breathless from having come down a flight of stairs to open

the door; her face had the pallor and ghastly look of chlorosis. The cheeks were bloodless, the lips white, and she seemed about ready to faint. These things I noticed at a glance, and passed on to my appointment. Twice during my visit this maid visited the basement on errands for the mistress, and as I afterward was informed was spared no steps because of her illness. The next week the girl left her service and applied to me for treatment. At her first visit to my office she seemed utterly exhausted. By the aid of the centrifuge apparatus I found on examination of one hundred parts of blood that there were only eighteen parts of red corpuscles. At the sight of the drop of blood on her finger she grew sick at her stomach, vomited and fell into a faint. It was two hours before she rallied sufficiently to leave the office. At her home in Sweden, the menstrual function was normal, but in the two years in this country it was altered, until the condition of amenorrhœa had existed for two months and for several months prior had been extremely scanty and watery.

This patient had symptoms of the pernicious forms of anæmia that alarmed me. I had her go to bed at a relative of hers and remain six weeks. Meantime the sanitarium treatment of rest, frequent nourishment, stimulating sponge baths, and the internal use of a tablet—composed of iron and arsenic, was persevered in, and at the end of this time, in one hundred parts of blood taken September 9, there were just double the number of blood disks in the tube, or thirty-six parts. At a later date, November 1, the number was increased to forty-four parts in one hundred. At this date the patient said that she had gone out to service again, was working without much discomfort; menstruation had returned to nearly or quite normal conditions. Her appearance was greatly improved, though I could not feel that all was well with her yet. This patient has not personally reported her condition, although I hear from her that she is not complaining.

So far as the remedy is concerned, in the three months she was under my care she had but two different remedies, iron and arsenic tablet, and when in bed a part of the time the tablet was discontinued, and china 1x, ten drop doses every two hours was given. When she had improved in the respect of having regained her appetite, the anæmia tablet was again administered.

Case 3. Mrs. P., aged thirty, consulted me in August last, complaining of a retro-displacement of the uterus.

She came from a distant part of the city and was greatly fatigued by the journey to the office. She complained of having a cold skin though the day was hot. The features were anxious in expression, face pale, lips bloodless, she was greatly depressed mentally, had difficulty in walking and breathing and in working; had dysmenorrhœa with a flow lasting only one-half of the day. Appetite variable and she scarcely had what would be called a full meal once a week. The bowels were obstinately constipated, accompanied with great distention by gases. She was faint many times each day; restless sleep and the entire train of nervous symptoms going with melancholia in early stages. With the systemic disorders there came on the uterine dislocation which at present gave her much annoyance and to her mind this condition was the cause rather than effect. The patient was extremely anæmic. I replaced the displaced uterus and supported it with a wool tampon. I prescribed arsenicum 3x, to be taken every two hours. Gave her instructions about the local treatment and dismissed her for a fortnight. During September the arsenic was continued as a remedy. She reported but little gain in a month's treatment. September 28. Centrifuge examination in sixty-eight parts of blood taken, only twenty-four parts were corpuscles, showing a great lack. October was a bad month for her, as she suffered a great deal from a facial neuralgia and a severe backache. There existed a renal complication amounting to a marked case of insufficiency. The solids were very deficient. November was a better month; thinks she noted quite an increase in general strength and a lessening of her gastric symptoms; she is eating and sleeping better. The displacement is not so troublesome, and the muscular tone much improved. This month she is still better. For the past two months the internal remedy has been fer. et strychnia in tablet form about the 3x.

This case began about puberty to suffer in much the same way as she now does, and about fourteen years of invalidism has been her misfortune.

I trusted to arsenicum and persisted in its use, but very little improvement following, I found the fer. et strych. a much better remedy.

II. THE PATHOLOGY OF ANÆMIA. BY DR. A. C. HALPHIDE.—Anæmia furnishes an anatomical, physiological and pathological basis for a belief in the independent dis-

eases of the blood. However, in our present state of ignorance, with our ordinary methods of examination, we have been unable to discover the causes of anæmia. It looks as if we should have to turn to other methods, and especially to the investigation of the blood serum, whence we have of late gotten such encouraging results.

The term *anæmia* as generally employed includes all diseases of the blood which are characterized by a deficiency in the number of the red corpuscles, or by a diminution of the total percentage of the hæmoglobin. Other terms, with more precise significance, are used to denote the same conditions; *oligocythæmia,* to indicate the deficiency in the number of the red corpuscles, and *oligochromæmia* to denote the diminution in the percentage of the hæmoglobin.

In the discussion of the pathology of the anæmias the usual classification will be observed. These are primary and secondary. Since secondary anæmias are at most only symptoms of other diseases, little attention will be given them. Still, by far the greater number of the anæmias in early life are of secondary origin. They are caused by hæmorrhage, acute infectious diseases, syphilis, rachitis, intestinal affections, and the diseases of the respiratory system, skin and bones. They are of mild or severe form, and may be accompanied by a leucocytosis, more or less marked. The degree of the anæmia is dependent largely upon the individual, the length and severity of the disease, and upon other unknown causes. The blood in these cases shows a varying degree of oligocythæmia and oligochromæmia, and if severe enough, poikilocytosis, microcytosis and rarely nucleated red blood cells.

Primary anæmia is usually understood to include chlorosis and pernicious anæmia.

Chlorosis. The most common of the anæmias is chlorosis, which takes its name from the effects of its most marked feature, namely, the deficiency of the hæmoglobin. This is often so great that the mucous membranes and skin become very pale and slightly green. In severe cases the hæmoglobin may fall to one eighth of its usual amount. The fall in the number of the colored corpuscles is never proportionally as great; in mild cases they may average 3,500,000 to the cubic millimetre, and they seldom if ever fall below 2,000,000. The following is a fair representation of the blood analyses in cases of chlorosis:

BLOOD EXAMINATION.

Erythrocytes	4,100,000
Hæmoglobin	30 per cent.
Leucocytes	20,000
Small mononuclear	45 per cent.
Large mononuclear	21 "
Neutrophiles	30 "
Eosinophiles	3 "

Considerable changes in the size and form of the erythrocytes occur; the irregular-shaped corpuscles or poikilocytes, the abnormally small, or microcytes, and abnormally large, or macrocytes, are usually present in considerable numbers. There is generally only slight leucocytosis, and often none at all. The prevailing type of leucocytes is the mononuclear.

The pathology of chlorosis outside of the changes found in the blood is imperfectly understood. Few cases die directly from the disease and the pathological findings in those which have come to autopsy have been very inconstant.

No wholly satisfactory explanation of the causes of the changes in the blood has yet been offered. Virchow called attention to the small size of the heart and large arteries, and from these attributed it to a lack of development. He regarded the disease as the expression of an inability of the blood forming organs to supply the demand made upon them by the rapidly developing body. Therefore, the disease was especially liable to occur in those congenitally defective. In some cases the generative organs are backward in their development and this gives some support to this theory. However, the frequency of the disease, its approximate limitation to one sex, its curability and the wide difference in the fall in hæmoglobin and the decrease in the number of the red corpuscles require a more transient and less organic causation.

Maragliano's recent theory of the action of the blood serum upon the blood corpuscles will repay study and may offer the correct explanation of the morbid changes in the blood. In his researches upon the blood plasma he discovered that local pathological changes influenced the composition of the blood serum, so that, in consequence it later destroyed the blood corpuscles. He found that the erythrocytes, when pathological conditions were present in the serum, were rapidly destroyed, whereas, in healthy serum they remained almost intact. He examined the blood serum in various diseases and found that in nearly all of them the serum has this destructive effect, with a

quantitative difference depending upon the resistance of the cells and the destructive power of the serum.

We know that in distilled water the coloring matter of the red corpuscles is rapidly extracted, but when a proper percentage of chloride of sodium is added to the water the integrity of the corpuscles is preserved. That the erythrocytes are not destroyed by the serum in which they float seems to depend upon the presence of a sufficient amount of salts in it. Now the specific gravity of the blood in these diseases is always 10° to 20° lower than normal, may this not be significant? It is a singular fact that the mixing of the serum of the blood of one animal with the blood of another of different species results in the destruction of the red corpuscles and renders the white ones inactive.

Pernicious anæmia. The blood in pernicious anæmia differs from that in chlorosis in three important particulars, namely, (1) in the marked diminution of the red corpuscles, (2) in the changes in the form and size of the corpuscles and (3) in the great decrease in the total amount of the blood.

Let us look at these factors separately, then we shall the more readily realize their meaning and understand the enormous extent of the change in the blood in this disease. The prognosis of the disease is so serious that it has been called *anæmia progressiva perniciosa.* It is the severest type of all the anæmias and affords abundant material for post-mortem investigation, for all cases except some due to intestinal parasites have proven fatal.

In chlorosis the most marked feature is the drop in the percentage of hæmoglobin, whereas, the most marked feature in pernicious anæmia is the great fall in the number of the red corpuscles. Thus while the total amount of hæmoglobin is regularly diminished, the amount in each corpuscle may be even greater than normal. The fall in the number of erythrocytes is enormous; cases have been recorded in which only 300,000 red corpuscles were present to the cubic millimetre of blood. The character of the blood is well shown in the following:

BLOOD EXAMINATION.

Erythrocytes	1,122,000
Hæmoglobin	29 per cent.
Leucocytes	16,000
Small mononuclear	43 per cent.
Large mononuclear	17 "
Neutrophiles	38 "
Eosinophiles	2 "

The changes in the form and size of the corpuscles together with the enormous diminution of the erythrocytes and relatively high percentage of hæmoglobin are considered to be diagnostic of this disease. All forms and sizes of cells are commonly found. Poikilocytosis is usually pronounced and microcytes and macrocytes are always in evidence. The erythroblasts are of the most diagnostic value. They are of the normoblastic and megaloblastic types, the latter often being present in large numbers. The microcytes, according to Eichorst, are much more numerous than in chlorosis and have a characteristic appearance. They are spherical, granular and highly pigmented. The total number of the leucocytes and blood platelets is as a rule somewhat diminished, the tendency to form rouleaus is less marked and the power of coagulation is feebler.

The whole quantity of the blood in pernicious anæmia is greatly diminished and at post-mortem examinations the blood vessels are always almost empty. The blood is thin and light colored with a specific gravity of from 1025 to 1035.

The pathological and anatomical changes in the organs seem to be chiefly secondary to and directly dependent upon the lessened amount and impoverished condition of the blood. Consequently the results are those which regularly follow an impairment of nutrition, namely, atrophy and degeneration. The most remarkable change is the extreme bloodlessness of all of the tissues throughout the body.

The marrow in the long bones is red and its fat is greatly reduced in amount. It contains many erythroblasts, both normoblasts and megaloblasts and often large numbers of microcytes. The marrow contains pigment which gives the iron reaction. The great numbers of the nucleated red cells led one investigator (Rindfleisch) to believe the cause of the disease to be an inability of the organism to change these cells into nonnucleated red corpuscles.

Important changes occur in the liver. The lobules are pigmented in the central zones and the adjacent cells often undergo fatty degeneration. Iron is loosely combined with the organic matter in the liver and a distinct blue colorization can be obtained by treating sections of the organ with ferrocyanide of potassium and dilute hydrochloric acid.

In the heart, small and sometimes large blood vessels extensive fatty changes are found. These changes in the heart, especially those in the left ventricle, have given rise to the terms "thrush breast" and "tabby cat" to describe their appearance. The intima of the vessels suffers most and shows many fatty patches.

The kidneys also become fatty and the urine is dark and contains an excessive amount of urobilin. The skin takes on a lemon yellow or "old wax" color, while the subcutaneous fat is little if any diminished, indeed it may be slightly increased.

Minute hæmorrhagic extravasations are very common and constitute an important feature in pernicious anæmia. They have been most often observed in the retina, probably because that part of the body is so readily accessible to examination. In autopsies they have been noted in the mucous and serous membranes of the gastro-pneumonic tracts and in the bladder. They have also been observed in the substance of the brain.

Œdema is not uncommon. It has been noticed in the feet and ankles, the face and occasionally over the whole body. Œdema of the lungs constitutes a common condition in the latter stages of the disease. Sometimes slight accumulations of serum are found, post-mortem, in the serous cavities, but they are never in sufficient amount to be observed by physical signs during life.

The increase of iron in the liver and the marrow and of urobilin in the urine afford strong evidence that the disease is caused by the excessive destruction of the red blood corpuscles—hæmolysis—as suggested above.

In concluding let me say that I am greatly taken with the blood-serum theory offered by Maragliano. It satisfies most of the conditions, is at least plausible and until it has been proven incorrect may be accepted.

III. THE FUNCTIONAL DISORDERS OF ANÆMIA AND THEIR DIAGNOSTIC SIGNIFICANCE. By DR. ALFRED C. CROFTAN. — Anæmia like dropsy, jaundice, diabetes insipidus or insanity is a symptom only; the anatomical and physiological changes of the blood, the resulting deficient oxygenation followed by impaired nutrition of the different tissues are the indirect etiological factors in the production of that varied and unstable train of functional disorders that form the symptom complex we group under the name of anæmia.

The clinical picture is never uniform and diagnostically it is one of the most difficult tasks to decide between organic lesions and some of the functional disorders of anæmia—a decision which is essential as a preliminary to intelligent and successful treatment.

At the bottom of all anæmic disorders lies a speedy exhaustion of energy with resulting lassitude and functional insufficiency. Whether applied to the voluntary muscles or to the involuntary fibres of the circulatory and respiratory systems, whether attacking the energies of the nerve centres or of glandular epithelia, the keynote of the transitory lesions we observe is *fatigue*, and the manifestations will be different according to the functions of the tissues attacked.

It is a well-known law of nervous physiology that fatigue of *the nervous system* is first manifested by increased irritability, thus with impoverished blood circulating in insufficient quantity through the nerve ganglia we have a condition of irritability quickly followed by exhaustion clinically known and easily recognized as "irritable weakness." The neuralgias resulting are the "cry of the nerves for more blood." The headaches and backaches of anæmia, its hysteroid and neurasthenic conditions, its perversions of the general sensations (canine hunger, perverted sexual desires), of the psychic sphere (crying and laughing spells, circular insanity, psychoses of various kinds), of the vasomotor system (polyuria, flashes of heat, frequent blushing, sudden pallor) the increased reflexes and the morbidly increased activity of the special senses are all due to this nervous irritability. As the anæmia persists we have the results of exhaustion of nerve centres —pareses and fainting spells, the latter in part due to transitory cardiac insufficiency, one of the consequences of fatigue in *the circulatory apparatus.*

Two factors are active in the production of the muscular lassitude and even degeneration of which the cardiac changes observed are the result. Physiology teaches us that the excitability of a muscle is dependent firstly on an elimination by the blood current of the katabolic products of muscular contraction (acid phosphates, etc.) and, secondly on a continuous addition of oxygen-carrying blood; the injection of fresh arterial blood into a fatigued muscle will stimulate it to renewed contractions. In anæmia the toxic products of tissue katabolism of the heart are not removed nor is the influx of oxygen carrying blood

sufficient, consequently we have fatigue of the myocardium and of the papillary muscles, with the following results: Firstly, dilatation of the heart with its concomitant symptoms, dyspnœa and the consequences of venous congestion; secondly, a relative insufficiency of the mitral valve due to weakness of the papillary muscles; in either case we have so-called anæmic murmurs at the base which so many of the older authors consider pathognomonic for anæmia; the delicate points of difference between these "functional" murmurs and the murmurs of organic heart disease are purely artificial, as we are dealing with a true, though slight and transitory insufficiency of the mitralis; as soon as the blood condition improves under suitable treatment the muscles of the heart regain their tone, the mitral ring is narrowed and the musculi papillares perform their function normally. A differentiation from organic mitral lesions is possible if the anæmia is of short duration, as the effects of a long-lasting insufficiency, possibly compensated, are, of course, not observed, thus with anæmic murmurs we never have an accentuation of the second pulmonary sound nor an hypertrophy of the left ventricle and the intensity of the murmur is undoubtedly less intense and more variable than in a true mitral insufficiency of any extent.

The "anæmic murmur" over the jugular vein lauded so highly in many of our text-books as of vast diagnostic significance has no meaning at all; it can be easily heard in the majority of healthy people and is as a rule produced by a narrowing of the lumen of the superficial cervical veins by pressure with the stethoscope. The pulse gives valuable indications to the educated touch; it is always small, soft, dicrotic and accelerated, qualities that are easily explained when we consider the partial degeneration (fatigue) of the muscularis of the arteries, the decreased blood pressure due to cardiac weakness and the exhaustion of the cardio-inhibitory ganglia.

Due to deficient capillary circulation are also the coldness of the cutaneous surfaces, particularly of the extremities and the pallor of the mucous membranes at the orifices of the body. It is a popular prejudice that an anæmic patient must be pale; this is not necessarily true, as the color of the cheeks is dependent on the more or less abundant development of a net of superficial capillaries and a patient may be profoundly anæmic and still have a ruddy complexion; it is a peculiar fact, that the lobule of the ear is

always very pale; this pallor, in fact, is considered by some clinicians abroad as one of the first signs that indicate an impoverished condition of the blood. A very misleading symptom is the œdema so often observed about the eyelids and the ankles, and due, of course, to the hypalbumosis of the blood combined as it often is with venous stasis.

The epithelia of the kidneys are also fatigued by poor nutrition and are functionally impaired; quite frequently they allow a transudation of serum-albumen from the blood another very misleading symptom especially for those unfortunate practitioners who shout Bright's disease as soon as a drop of nitric acid or a little heat produces a precipitate in a test tube of urine; it is easy, of course, to exclude a nephritis from the complete absence of tube casts (hyaline cylinders are found here, of course, as in normal urine) and the transitory character of the albuminuria. Hæmorrhages from the kidneys and the mucosa of the genito-urinary intestine (renal and extra-renal hæmaturia) are not infrequent but are usually combined with other hæmorrhages, notably from the retina, the gums, the skin and the meninges. There is in these cases also, a tendency to epistaxis and profuse menstruation; in other words a conditionof hæmophilia exists.

The gastric and intestinal symptoms that are so frequent are of course due to impaired functional activity of the glandular elements of the digestive tract produced either by deficient blood supply or possibly by nervous influences.

Thus we see that clinically a world of symptoms confronts the diagnostician, some of them, if unfortunately grouped, exceedingly misleading. How easy, for instance, on superficial examination, to suspect "heart disease!" if we have murmurs, venous congestion and œdema. How easy to think of "Bright's disease" when we find albumen and œdema; the various nervous phenomena, the dyspeptic symptoms may lead us off the track; a *careful*, very careful analysis of the symptoms will alone protect us from error, besides we have quite a valuable diagnostic aid in blood examination; beyond the recognition, however, of the so-called primary anæmias (progressive, pernicious anæmia and chlorosis) which can be diagnosed by a blood examination alone, the demonstration of a decrease in the hæmoglobin is only one additional symptom which ranks in significance after some of the clinical signs enumerated above. The etiology of the conditions prevalent is, of

course, of paramount importance and the finding of some primary cause and its removal is the one and only road to successful therapeutics. The conditions that must be considered are very numerous; after the "primary" anæmias have been ruled out by blood examination a careful clinical examination of every organ and of all the excreta and secreta should be made to detect a source of excessive blood katabolism. Thus malignant neoplasms, diabetes mellitus, phthisis pulmonum, morbus Brightii, exhausting diarrhœas and continued febrile affections may be at the root of the trouble; chronic intoxications and infections as by mercury, lead, arsenic or malaria, syphilis, etc., must be looked for and above all intestinal parasites.

A few words about the above mentioned primary anæmias or the anæmias that are not a symptom but a disease. Chlorosis according to very modern ideas is looked upon as an intestinal auto-intoxication; the primary factor is constipation or some one other of the frequent gastro intestinal disturbances of adolescent girlhood; owing to the fermentative processes going on in the intestine an excessive quantity of sulphuretted hydrogen (H_2S) is generated which following its well-known affinity for iron, binds this element in the form of iron sulphide (FeS), thus rendering it inassimilable, and robbing the blood through its hæmoglobin (of which iron is so important a constituent) of its chief oxygen carrier. Secondarily now, the train of symptoms above enumerated, that we could trace back to deficient oxygenation appear. Therapeutically, therefore, the removal of the intestinal disorder is advised, and while this is being accomplished the administration of large quantities of iron salts which would bind the surplus hydrogen sulphide and leave a surplus of iron free in the bowel to be converted into the albuminate or some other assimilable form.

The validity of this pretty theory is on the best road to be verified clinically, so that we have only one so-called "primary" or "idiopathic" anæmia, the progressive pernicious form left; the weight of modern experimental and pathologico-anatomical evidence seems to point to this disease as an infectious disease of the blood forming organs, so that with a true demonstration of the truth of this idea anæmia would be dethroned from its dignity as an individual morbid entity and be deservedly ranked as a very poor and exceedingly misleading name for a conglomerate mass of varying symptoms.

Discussion: Dr. E. Stillman Bailey: No attempt has been made to multiply the number of cases submitted in this report. Only those that illustrate the clinical point of anæmia in the young, and the necessity of properly caring for the same were decided on. Questions of enormous importance remain to be settled concerning anæmia and other disorders of the blood. It is a hopeful sign of the times that so much attention is being given to this study.

As soon as an anæmic patient presents herself or himself at my office I insist upon the immediate analysis of the blood. This I approximate by the use of the centrifuge apparatus. I prick the lobe of the ear, obtain a few drops of blood in the indexed hollow glass tube; set this whirling in the machine for two minutes or for a thousand revolutions, and then read the resulting approximate measurements of the white, the red corpuscles and the liquor sanguinis.

In a few minutes' time I have satisfied myself of the probable condition of the blood. In fourteen cases where I used this method I found eleven samples of the blood deficient in the red blood corpuscles and excess of serum. This estimate is far better than a guess.

The practical side of this study is the happy combination of therapeutics to fit the pathology. There is hardly a physiological laboratory or manufacturing pharmaceutical establishment that has not studied the matter of foods for anæmic people, and also for tissue building preparations that theoretically should cure. My experience is that many of these preparations have decided merit, but their enumeration is hardly in line with my purpose in this discussion.

The combination of foods and remedies are also limitless, and many are of excellent value. The real point being for the physician to determine the real lack and to have resources out of the many offered him to supply what is needed.

In a recent publication of homœopathic remedies with symtomatology* and repertory, over sixty remedies are

*A Rational Comparative Materia Medica. Malcom & Moss. p. 842.

named as being of service in some of the conditions consequent upon anæmia. Those of greater significance are as follows, and in the order of importance are calc., phos., carbo. veg., cocculus, ferrum, ferrum phos., hellebore, heolonis, ipecac, kali-carb., kali phos., mercurius, nux., muschata, phos., pulsatilla, secalae, verat. alb. and zincum. The use of the various preparations of arsenic and strychnia that clinically are found so helpful are not noted in this list, which to me are the most useful of all remedies.

The effect of massage upon the blood is another clinical observation that has considerable of importance in treatment. Mitchell, in the *American Journal of the Medical Sciences*, May, 1894, reported a series of examination, of thirty-five cases of blood examination, before and after the treatment by massage. In all but three cases there was always an increase in the number of corpuscles, and usually in the proportion of the hæmoglobin.

The author suggests as explanatory "that the increased richness of the blood in these cases does not result from the production of blood corpuscles, but rather from the sweeping into the circulation of corpuscles that had lain in the byways of the circulation." Thus anæmias—associated with pelvic, venous stasis or capillary congestion could scarcely fail to be benefited by this treatment.

Clinical studies of the blood have suggested the necessity of a closer study of climatology than had previously been reported. The sea level and the high altitudes give great variations in favor of the altitudes as found in a series of microscopical examinations of blood made at different places and at different altitudes, remedies not being used. Thus at Christiana—a sea level—ten men examined averaged 5,800,000 red corpuscles per cubic millimeter, and 98 per cent of hæmoglobin, and of ten healthy women, 5,244,000 red blood corpuscles with 98.5 per cent of hæmoglobin (Wollf, American Year Book, 1896). The Cordilleras, 4,392 meters above sea level ten healthy men averaged 8,000,000 red blood corpuscles, there was a corresponding proportion of increase as the tests were made be-

tween the sea level and the higher altitudes. This study is well worth observation, especially if the patient goes into chronic stages and evidently is living on the wrong atmospheric plane. Much more could be said but my time is limited.

Dr. J. E. GILMAN: I am surprised in hearing the list of remedies for anæmia that arsenic was not placed in the first rank. From the pathogenesis of that drug it would seem that it should appear as a prominent remedial agent. Undoubtedly the treatment of anæmia is fully as much dietetic as medicinal, and the tissue remedies should appear most frequently indicated; but in cases where we have a distinct morbid influence to counteract, such as exists in the pernicious anæmia, due to malarial influence, I think arsenic would be a remedy of major importance.

Dr. C. J. SWAN: Dr. Halphide's paper has interested me very greatly, and especially the portion referring to retinal changes in anæmia. The retina in the milder forms of anæmia does not appreciably change color, and it is only in very advanced and severe cases that the nerve head becomes white. I have examined one case of advanced pernicious anæmia in which the fundus changes were very marked. The paleness was considerable, and upon the retina were scattered many spots of hæmorrhage.

It has been found that where these hæmorrhages have occurred the portion of the retina occupied by them becomes absorbed, and necessarily results in a blind spot or "scotoma" in the field of vision. At one time this was looked upon as a phenomenon peculiar to this disease, but it has since been found that it often occurs in other cases of nonseptic retinal hæmorrhage.

Dr. CORNELIA S. STETTLER: It seems to me that in treating anæmia there is the same difficulty that we find in the treatment of other diseases. We must approach the case from opposite directions; for on one hand we have the fat and flabby subject who eats too much and exercises too little, and on the other the lean and ambitious girl, or woman, who is always overworked and underfed.

Naturally, the same prescription of diet and exercise would not suit both cases.

I have great confidence in massage, electricity, horse-back riding, gymnastics, walking, cold sponge baths and even bicycling, with proper precautions. For internal remedies I have had the best results from the cit. of iron and strychnia, ars. jod., and some of the tissue remedies. They are none of them, however, specific for any form of anæmia.

Dr. C. D. Collins: My experience with anæmia has been such as to lead me to say that it is not always easy, in fact, it is often impossible to determine the special cause in each individual case. The results of our investigations are more often negative than positive, and leave us to deal only with the fact that anæmia exists. As for its treatment, I endorse all that Dr. Bailey and Dr. Clapp have said, but would like to add that dietary regulations are no less important than climate and medicines, but are often disregarded. A careful study of the case with a view to select the proper diet and hygiene can scarcely fail of good results. We must remember that it is not how much the patient "eats," but how much she "assimilates" of that which will go to generate more and better blood.

The free use of such foods as bovinine, liquid beef peptenoids, proteinol and the malt extracts, or even of ordinary beer is often beneficial. The malt extract is especially indicated in *nervous* cases of anæmia. Alcohol baths with brisk massage have also a decided *food* effect rather than a stimulant action. Ferrum phos. and phosphorus have most frequently served me well, but no remedy in the whole materia medica is exempt from a call in treating anænia.

Dr. R. Ludlam: The subject of this report and the scientific and practical scope of the papers, as well as of the discussion, are of unusual interest. There are so many kinds of anæmia, or rather this symptom attaches itself to so many diseases, that its pathological significance varies exceedingly. If this is true, and Drs. Halphide and Crof-

tan have surely made it plain enough, its proper and most skillful treatment cannot always be the same. In young girls of the so-called better class it often has its root in the dietetic and mental abuses of life in the boarding-school and the seminary. But, whether the growing girl is exposed to a bad diet, a lack of proper exercise and the common causes of mental indigestion while nature is building her brain, in school or at home, the result is the same. And considering that these risks are taken at puberty, that a large share of the victims are predisposed to tuberculosis and to blood diseases of one kind or another, it is a marvel that so many of them escape.

In young women the predisposition to anæmia may often be counteracted by a change of climate. The sea air will help some cases, and others will be cured by going to the mountains. It is worth while always to look for the first signs of peritoneal or of genital tuberculosis in a decidedly anæmic subject, especially if the anæmia cannot be ascribed to hæmorrhage or to a nervous shock. Chlorosis is in some unaccountable way associated with ovarian inadequacy; but, although it is often involved, anæmia has no necessary relation to the menstrual function. For this reason the old idea of "forcing the flow," or of regarding its resumption as a sure sign of progress in the cure of anæmia, was clinically wrong and mischievous.

Dr. KATHERINE B. CLAPP: I should like to say in reply to Dr. Gilman's remarks on the use of arsenicum, that, while fully realizing the value of this remedy, it seemed to me that my patient needed to expel from her system certain toxic principles, and the mercurius was an energetic agent to act in that way. The prolonged dancing weakened the heart, and the nutritive organs of the body suffered in consequence, and hence we had a retardation of their activity. The ferrum was given for the three prominent symptoms: a clay-colored complexion and puffiness of the face; a ravenous appetite, and an increased action of the heart. The mental symptoms did not call for aconite, neither for calcarea carb.

IV. A *RÉSUMÉ* OF THREE HUNDRED CASES FROM THE CLINIC FOR THE MEDICAL DISEASES OF WOMEN, WITH SPECIAL REFERENCE TO THE PAIN LOCALIZATIONS AND NERVOUS FUNCTIONAL DISORDERS. By Dr. Hannah Jones Payne, Chief Clerk of the Clinic.*

The case books contain the written history of 300 cases. Of this number 40 were cases referred to the various surgical departments, while 59 came to the clinic for prescriptions for simple ailments, or were sent to other clinics, did not submit to examinations, or returned but once, so that only a partial history was obtained. In all 109 cases were thus seen but the once, or did not call for special treatment in this specialty, so that the result of treatment was unknown and is therefore not included.

Of the 191 cases remaining, we find the condition of prolapsus uteri in 70; retroversion, 38; forward displacement, 15; and 5 cases of retroflexion. In 14 patients the ovaries were inflamed and enlarged. There were cervical or perineal lacerations in 84, and 71 cases of granular cervicitis; 98 patients complained of constipation, and 10 others had alternate diarrhœa and constipation. In 24 cases a hæmorrhoidal condition existed; 54 had the symptom "frequent micturition." There was a leucorrhœal discharge in 148 patients.

Pain in the left inguinal region was complained of by 148, and 35 of these had pain in the right side also; 141 had pain in the lumbo-sacral region, and in nearly all cases where a displacement existed the "bearing down," "dragging" sensation in the pelvis was also complained of.

Of the 98 cases in which constipation existed, 54 complained of headache in the frotal region, and 12 cases had also the reflex pain in the left hypogastrium. "Pain in the vertex" was found in 37 out of the 128 cases of displacement.

I can scarcely refrain going into this statistical report of symptomatology at greater length, but it is my purpose to show something of what we have been able to do to remove these symptoms.

*This report is submitted as the fourth series of cases furnished from Prof. Bailey's clinic. The first series of 150 cases was reported in the Clinique, Vol. XI., page 146. Third series, Vol. XIV., page 88, Nos. 20,300 to 20,800. From January 1893 to September 1894 over 250 cases were recorded. In the rearrangement of the clinics, clinic No. 21,100 was given to this clinic, and this report includes cases from 21,100 to 21,400, making the grand total of 1,050 different patients treated in this clinic. This report is made to supplement that in Vol. XVI., page 495, with its accompanying diagram of localizations.

In the treatment of these cases there are innumerable difficulties which cannot be overcome. Many of them come long distances and after a treatment they go from the clinic room to the street car to be jolted along for several miles, many times having to stand a part if not all of the way to their homes to find household duties awaiting them.

They have probably been given directions for the postural treatment, but she who has so much to do cannot find time to lie down for one-half hour during the day. Many of them have not the convenience to take the prescribed douche even if they could have the time; and too, directions for proper diet cannot be carried out.

Yet in spite of these and many other difficulties, in 119 of the original 91 cases we have a marked improvement. Of the remaining 72 cases 57 did not report after the first week, a number were sent to this clinic simply for diagnosis, and a few improved for a week or two and then dropped out.

It was very interesting to note the order of the disappearance of the symptoms. Almost invariably the first symptom to leave is the lumbo sacral pain. This is especially true in cases of displacement where the organ was carefully reposited and supported by tampons this being done two or three times a week. In 27 (out of the 37 cases who complained of pain in the vertex) this symptom left early in the treatment of the case. Thirty-nine patients had gastric symptoms and these were among the first to leave as the local condition improved.

In many patients these were the most annoying symptoms, as in case 21,119. Mrs. L., age thirty years, entered October 18, 1894. Menstruation began when she was thirteen years, and she has always been regular every twenty one days, but the flow is scanty, lasting only one or two days. She was married when twenty-one years and has had two children. She complained only of frequent attacks of nausea with occasional vomiting and a great accumulation of gas. An examination showed retroversion, a bilateral laceration of the cervix with granular cervicitis. The uterus was reposited, the cervix was treated and kali phos. 6x was the remedy.

There was a marked improvement, and, after December 5 no return of this symptom.

Of the 54 patients complaining of "frequent micturition" there is a record of 27 in which the symptom was

purely reflex and was removed as the local condition improved. In 15 cases a urethral caruncle existed and this was a source of constant irritation which could only be met by its removal.

Palpitation was frequently the only symptom complained of or was one of many annoying symptoms given, and almost invariably this is associated with general nervousness and excitability of mind. In case 21,295 this cardiac disturbance was so marked that she was oblivious to all her other symptoms. She came to the clinic June 9, 1896, complaining of frequent attacks of palpitation. She was so nervous and easily excited that she could not do her housework. She felt tired and nervous all of the time. She also had backache, pain in the inguinal regions and constipation. She was æt. twenty-eight. Puberty was established at fourteen, and the menstrual flow, which was profuse, dark colored and clotted, appeared regularly every twenty-eight days. She was married at twenty-three, and has two children. A local examination showed retroversion to the second degree, granular cervicitis (very severe), lacerations of the perineum and the cervix and proctitis.

The uterus was reposited after thoroughly cleaning the parts with a solution of creoline. Tampons were inserted to support the uterus. Borated calendula powder was used on the cervix.

She was advised to take hot sitz-baths at night, also a hot douche, and to lie in the prone position for one-half hour morning and evening. Belladonna 3. July 24. The patient said that she felt like a new being. There was no backache nor pain in the inguinal regions.

She is less nervous and excitable and is not so annoyed with the palpitation. The bowels move regularly. Locally, the inflamed area was greatly reduced. The uterus falls back to the first position. The leucorrhœal discharge is greatly diminished. She continued to improve and has not been to the clinic since August 21.

Pain in the left inguinal region, if purely reflex, disappeared early in the treatment. Ichthyol painted over the area with a solution of this drug used as a hot compress has done much to remove this pain when associated with ovaritis.

The most stubborn symptom, or at least the one with which we have had the least flattering results, is that of constipation, with its accompanying frontal headache. In a few cases it was a reflex symptom only, or was caused by

the pressure of a displaced uterus, and I find a record of only nineteen cases in which the bowels moved only as the uterus was placed in its normal position. In others an occasional enema with such remedies as nux vomica, podophyllum, chelidonium, sulphur, hydrastis or aluminum has brought relief.

I regret that I am not able to give an accurate report of the number relieved of this troublesome symptom, but in handling as many patients as present themselves at such a clinic it is possible to keep a record of only those symptoms which cause the greatest inconvenience.

For its interest and because it is an average clinical patient I would like to report case 21,247. Mrs. H., aged twenty-five, came March 28, 1894. She has been married eight years and has one child seven years old. Four years ago she had a miscarriage at the sixth month and she dates her illness from that time. The menses have been irregular, scanty and light colored. There is a profuse leucorrhœal discharge. She complains of pain with tenderness in the left inguinal region, great dragging, and a bearing down pain in the pelvis. There is a constant pain in the lumbo-sacral region, with hypersensitiveness all along the spine, aggravated over the region of the lower dorsal nerves, at the middorsal region, over the seventh cervical vertebræ. She also has pain in the occipital, the vertex and frontal regions. She is constipated. Examination showed prolapsus uteri to the second degree, a granular cervicitis and a hyperplastic condition of the cervix.

The uterus was reposited and supported by tampons saturated in a solution of hydrastis. She was instructed to lie in the Trendelenberg position for at least a half hour morning and evening. Bell. 3x.

The lumbo-sacral pain with the dragging sensation were the first symptoms to disappear. The bowels moved regularly after the second week. The headache was the next symptom to leave, and May 22 she reports all pains gone except that at the seventh cervical vertebræ. One month later this pain also had disappeared and the patient said she felt perfectly well. In this case it is seen that the bowels began to move normally as soon as the local condition was corrected.

DISCUSSION: Dr. LUDLAM said: This paper represents such an amount of labor on the part of Dr. Payne that it merits a word of approval and of comment. Sta-

tistics are often untrustworthy, and sometimes misleading, for the doctor too may quote figures for his purpose. But when carefully and honestly tabulated, as I believe they are in this case, they may be of essential service to the profession. This dry *résumé* is ripe and juicy with suggestions. It stands for the fact that the *medical* diseases of women are still represented and studied in one of the most popular clinics in the "Old Hahnemann;" and that there is an abundance of material, and a great variety of subjects therein for illustration. They show that the surgical craze has not upset our reason and tempted us to operate indiscriminately upon all the women who come hither for relief; that the simpler palliatives, asepsis, and manual and hygienic expedients may and will often prove effective and sufficient; that our remedies have a range of utility that should not be disregarded and which, if we study our cases carefully, will surely increase as time goes on; and that the right kind of training, with increased diagnostic ability, will show that the rules of modern experimental medicine may be applied to this as well as to other specialties.

VOLUNTEER PAPERS. V. HODGKIN'S DISEASE CURED BY INTERNAL REMEDIES. BY DR. J. E. GILMAN. — The definition of this disease as given in the Reference Handbook of the medical sciences is "a disease of which the most prominent features are a more or less general enlargement of the lymphatic glands; enlargement of the spleen due to hypertrophy of its malpighian bodies; new formation of adenoid tissue in various parts of the body; a high though not extreme degree of anæmia and the absence of leucocythæmia." Without entering into the etiology or the morbid pathology of the disorder, I wish to call your attention briefly to some of the symptoms of the disease and illustrate it with a case occurring within my notice. Enlargements of the lymphatic glands in some part or other of the body forming conglomerations or bunches of glands resembling clusters of grapes to the touch are among the earliest symptoms, the glands gradually assuming the hypertrophied character. As they increase they press upon contiguous tissues and cause profound

disturbances of function and nutrition, and an anæmic condition sets in sooner or later. According to the location of the enlarged glands depends a good deal the more marked disturbances: If the cervical and thoracic glands are the ones affected it may interfere with the circulation of the blood in the brain, or cough, dyspnœa and difficult deglutition may ensue; if in the axilla brachial neuralgia and œdema of the arm may follow; if the inguinal glands similar disturbances of the lower extremities; jaundice and ascites, when the portal glands are enlarged. There is a condition of anæmia, the patient tires with the slightest exertion and there is palpitation of the heart. Fever presently appears of the hectic variety, with morning remissions, and having somewhat of the appearance of a malarial paroxysm, but lacking the rhythmical regularity of the malarial diseases. The fever may reach 103 or 104, or even a little more on occasions, and there are night sweats; when the fever is pretty continuous and reaches this intensity the patient speedily sinks under the disease. Digestive disturbances are present; there is impaired digestion, nausea, vomiting and gastralgia; stomatitis sometimes occurs. Constipation is the rule and a disagreeable and persistent pruritus may be present. The prognosis is an unfavorable one, nearly all cases according to different authorities proceeding to a fatal termination. Especially unfavorable symptoms would be the considerable number of the glands involved, especially if in dangerous location, long continued high temperature. The average duration of the life of the individual after the advent of this disease is about two years.

Case. With this brief statement of the generalities of Hodgkin's disease I wish to attach the statement of the patient himself as given to me:

CHICAGO, Sept., 18, 1896.

DR. J. E. GILMAN.

Dear Sir:—Up to the age of twenty or twenty-two I had enjoyed what might be called perfect health, scarcely knowing the meaning of the word fatigue, but about 1888 I had spells of being bilious, slight palpitation of the heart and my complexion, at times having a dark yellowish cast accompanied by a drowsy feeling, especially after eating.

I was told this was caused from my liver and dyspepsia, and at different times took medicine prescribed by my doctor. In 1893 I accepted a position at "the Columbian Exposition," thinking that as I had been confined indoors most of the time for several years an outdoor position would be beneficient to me; but much of the time my appetite was poor and I lacked ambition, feeling tired and sleepy, as I thought much more than was natural, although at times would feel as well as I ever did.

I had fairly good health until about January 1, 1895 I had a severe

cold or grippe with rheumatic pains in different parts of my body and bones, and at about this time noticed an enlargement at the lower extremity of the right side of my neck, that felt like a sack of marbles about the size of a goose egg.

I consulted a doctor and after taking his medicine for a month or six weeks, and getting worse as I thought, discontinued its use I then tried Payne's celery compound, also Warner's safe cure with no better results.

During this time I had severe nightsweats, wanted to sleep about two-thirds of the time, and had little ambition for work or recreation of any kind; had a dry tickling cough and at times palpitation of the heart with spells of dizziness. This continued until May 2, 1895 when I became so weak that I took my bed, and May 5, I think it was, you was called to see me and since that time you, no doubt, have sufficient knowledge of my case. I am weighing more and feeling better generally than I have for the past eight years and hope in a short time to see the slight swelling remaining on my neck disappear.

Respectfully,

S. W. H.

When I took charge of the case May 6, 1895, the patient presented the following symptoms: There was a fever of almost constant type, only occasionally would the temperature be normal and reacting at one time to 105°. Nightsweats were profuse and exhausting. There were two large grape-like bunches the size of my fist involving the cervical glands, and in other parts of the body were noticeable enlarged and knotted glands. The patient was emaciated. There was present the stomach derangement with stomatitis and a profound exhaustion. The cervical pressure made deglutition an effort and there was cough and some dyspnœa due to an extension to the thoracic glands. There was enlargement of the tonsils. In this we have as a similia baryta iod., and for a while I gave this as the main remedy. Arsenic iod. aided the removal of some of the digestive disturbance at a little later date, followed by ferrum iod. for the relief of the nightsweats and the anæmic condition. Guaiacol was given, I confess, somewhat empirically as an experiment but largely as an antiseptic. The three iodides, the baryta iod., the arsen. iod. and the ferrum iodide had so many times removed glandular engorgements, hypertrophies and various neoplasms that I thought here is so close an analogy to the localized forms in which they have proven specific that certainly they should remove this also, and the result was as stated. The patient steadily and rapidly improved so that by July 20 he was able to take a short journey to the country, the glandular trouble gradually disappearing, so that at the present time, October, 1896, it may safely be said that it is cured. From an experience

extending through twelve years I have given these three remedies in all cases of hypertrophy of glandular structure, such as nodules in the breast, enlargements and induration of the cervical and inguinal glands and in this time have removed many cases that the surgeon had marked as his own especial property, and I do not now recall one single instance of a failure to entirely remove the induration and restore the normal condition of the involved tissues when the 3x triturate of these three iodides has been followed up persistently and steadily:

Discussion: Dr. Shears: I have been much interested in the report presented by Dr. Gilman, although I arrived too late to hear the first part of the paper. I have long been familiar with Dr. Gilman's faith in these remedies for the treatment of this class of cases, and I have personal knowledge of a number of cures which he has made and which were fully as remarkable as the one here reported.

The efficacy of each of the remedies mentioned is due, I believe, to the iodine contained therein, and is another illustration of the action of that drug upon the glandular system as shown by its use in the treatment of goitre, as well as the use of calcarea iod. in the scrofulosis of children, the baryta iod. in hypertrophied tonsils, and the potassium iod. in the glandular lesions of syphilis. Its action, while not restricted to any especial portion of the glandular system, is most marked upon the thyroid, the mammary glands, the ovaries and the testes. These enlargements are almost always a hyperplasia of the glandular structures, and are due to an inflammatory process which may be either sub-acute or chronic in character, usually the latter. They are most often of slow growth and painless, manifesting the sluggishness and indolence so characteristic of iodine in all its forms. The advantage of its employment in the different forms mentioned by Dr. Gilman, namely, the baryta, the arsenic and the ferrum iodide, lies, I believe, in the fact that with the change from one to another the action of the drug continues without increasing the dose, and thus its effects are manifested for a much

longer period of time than would be possible with any one of the salts or with the iodine in its pure form.

While I have great confidence in the use of this drug in these hyperplastic enlargements, I have very little faith in its action upon true neoplastic formations. Knowing of Dr. Gilman's success in the treatment of certain glandular enlargements, I have given the remedies a thorough trial in undoubted cases of real malignant growth but have never seen a favorable result. When therefore, the symptoms indicate the presence of a malignant tumor, I cannot counsel delay in the utilization of the only method which offers promise of definite cure, namely, complete and thorough removal.

Dr. GILMAN: I have but very little to add to the statements that I have already made except by the way of amplification. I have used the three iodides for the past twelve or more years in numerous cases. I first used them in a case of painful and rapidly increasing nodular growth in the breast. The patient was approaching the climacteric, and the growth had become a very serious matter. Profs. Helmuth, Hall and others had examined the case and the opinion was given that from three to five years would end life unless an operation could remove the trouble. In a few months of this kind of treatment the neoplasm was removed without surgical interference. An injury eight years or so later caused a development of the former symptoms, which were easily removed in a very few weeks. Since that time I have used it with unvarying success for all glandular engorgements of the breast.

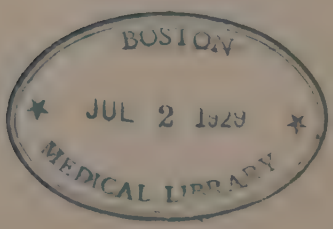
Another case to illustrate its action. A young lady stenographer had an induration of the glands of the neck. So large had it become as to be a positive deformity; so hard that it was stony in the sensation to the touch, and it interfered with movement of the jaws and the muscles of the neck. It was still increasing. Drs. Fenger, Senn and Isham had each seen it and had each decided that the knife was the only relief, and her employer sent her to me for advice. I told her that if she would take the medicines

regularly I might be able to arrest the growth without an operation. In three months there was not a trace of it. It had melted away as a snow bank before the summer's sun. At first there was softening, then the lump broke into two, and these pieces softened and disappeared. There has been no return of the trouble. There have been so many such instances that I give the treatment with a feeling of certainty of success, and can assure the patient with the confidence born of continual accomplishment.

VI. Carcinoma of the breast and axillary glands (with specimen). By Dr. G. F. Shears.—Dr. Shears presented a specimen consisting of a carcinoma of the mammary and axillary glands which he had removed during the day, and in this connection made the following remarks: "I desire to present this specimen because it illustrates the more recent method which progressive surgeons have adopted for the removal of mammary and axillary glands. It was the custom in earlier times and is still recommended in some of our text-books, to remove the mammary gland by an elliptical incision and afterward to open up the axilla and remove the axillary glands with the axillary fat. This line of procedure was a natural result of the extension of the operation from the mere removal of the gland to the more complete operation of the removal of the contiguous glands. After this had become a recognized procedure it was a very easy step to the present plan of opening the axilla first, dissecting out all the glands contained therein and then following down the chain of lymph glands to the mammary gland which is removed as the last step in the process of extirpation. By this means the axillary gland, the axillary and pectoral chain of lymphatics and the mammary gland are removed in one mass and three objects are gained; (1) the removal is more complete, (2) there is no division of the chain of lymphatics and less probability of allowing cancerous material to be spread about in the wound, and (3) the branches of the axillary artery are divided but once. In

the accompanying specimen you will notice that in the chain of lymphatic glands from the breast to the axilla there are many small nodules, some of which might have been overlooked under the old plan of operation.

"There was one point of interest in this case which is not exhibited by the specimen before you, and which I may mention as illustrating the value of saline injections in the treatment of shock. The patient did very nicely during the operation and when removed from the table seemed to be in excellent condition. Half an hour later she began to show evidences of shock. The pulse which was normally from 70 to 80 per minute, dropped to 44, and the face was cold. She did not recover consciousness and was insensible to pain. Hypodermics of brandy, digitalis and nitro-glycerine were used with temporary benefit, but the best result seemed to be obtained from the application of heat externally and high injections through the colon tube of three quarts of a hot saline solution which was given at intervals, one quart at a time. Preparations were also made for the intra venous injection of a salt solution, but it was not found necessary although almost four hours elapsed before she had fully recovered. I am glad to say that she is now doing nicely."



Editorial.

THE DECEMBER MEETING.—While the old year was at 6's and 7's, in a state of "betweenity," and the Class was out for a holiday, the Clinical Society held its usual monthly meeting. The interest shown in the report of the Section on the Medical Diseases of Women (page 22) was worthy of the theme and quite in accord with the traditions of the society. We commend its papers, collected by Dr. Bailey, and their discussion to the careful attention of our readers: (1) because of their intrinsic value; (2) as furnishing an illustration of applied science that concerns our school of practitioners especially, and (3) as a clinical argument against allowing the medical diseases of women, as a class, to drop out of view altogether.

Dr. Gilman's case of Hodgkin's disease, or lymphatic anæmia, (page 44) illustrates the value of our internal remedies in the treatment of certain kinds of tumors; and reminds us that, having their range of usefulness, they should not be overlooked or forgotten. The clinical remarks upon that paper are very suggestive. And so also is the brief report of Dr. Shears upon a new mode of extirpating the mammary gland, as well as upon the efficacy of saline enemata in case of profound surgical shock. All of which shows that, whatever others may do, the active members of this society are not inclined to sink the doctor in the apostle.

THE HABIT-DISEASES.—If there is an "organic memory" that has its influence in recurrent disease, what is usually styled a predisposition is a morbid habit in more senses than one. It may be hereditary or acquired, but the impression is brought back, comes up again, like an echo, in an unconscious way, to the annoyance of the

patient and of the physician. Habit-diseases are of this kind. They constitute a distinct class of affections that may or may not be neurotic, and that can only be cured by dislodging and overmastering the stored-up memories of former attacks. The scar is sensitive to the same irritant, whether it be infectious or not; and the score is kept in the memory of the tissues, as if they had a mind of their own.

Excluding those disorders of which the hysterical and the reflex elements are such constant and troublesome factors, all the morbid processes that recur periodically and with more or less regularity under given conditions belong to the class of habit-diseases. This is why it is so difficult to cure them radically. Rheumatism, neuralgia and catarrh are memory-affections in the sense that, instead of giving exemption in the future, the first attack increases the liability to a second one, and so on.

The modifying influence of epidemics over the ordinary diseases that may follow them more or less nearly illustrates the tendency of certain symptoms to reappear and to leave their stigmata upon the organism. Post-grippal and post-catarrhal disorders generally are developments of this kind of a morbid memory, that may or may not have a nervous footing.

The cause for some of these revivals of sickly impressions is so delicate as to elude the scrutiny of the scientist. For the simple reason that no such cause exists in them, they cannot properly be referred to a special microbe, or to its pestilent ptomaine. They all have their peculiar cycles of recurrence and of exemption, or remission; but whether we treat them on the refined principle of similia, or by the cruder methods of substitution and supersession, by faith or by fraud, they will not be cured until the affected tissues and organs have overcome and forgotten the old habit. That habit must be broken up, and the unconscious memory of the disease, with all that pertains to it, erased and eradicated, or the result of our treatment will be only a partial success.

Hospital Notes.

THE CHILDREN'S CLINIC.

SERVICE OF PROF. JOS. P. COBB.

RECURRENT CHOREA WITH DELAYED MENSTRUATION, PERIODIC EPISTAXIS AND ENDOCARDITIS.—Since making our former report of this case to the Clinical Society* in September, 1896, we have learned: *First*, that the father of our patient suffered with an ulcerated wound around and above the left ankle. This ulceration followed an attack of inflammatory rheumatism and continued unhealed for eight years, until his death. *Second*, the mother now informs us that our patient was pushed against an iron newel post, striking her back, just two weeks prior to her first attack of chorea.

In October of this year the epistaxis did not appear, but there was an effort at menstruation. She had a slight flow, normal in character, for a few hours, skipped one day and a reappearance for a few hours on the succeeding day. In November there was no effort at menstruation and no epistaxis.

Immediately after the period in October an attack of chorea declared itself which gradually increased in severity until after the November cycle had been passed. These choreic movements involved the muscles of the limbs, face and abdomen, and were more violent than those of any attack during the last two years.

She contracted a cold, developed an ulcerated tonsilitis, and at this time (early in November) was found to be suffering from an attack of endocarditis. Since the middle of November she has been improving gradually in every way, the choreic movements of the voluntary muscles ceasing entirely with the appearance of a normal menstrual period in the middle of December. The cardiac lesion shows marked improvement but has not entirely disappeared.

Her treatment during this period has been absolute

*The CLINIQUE Vol. XVII., page 522.

rest in bed; a full non-stimulating diet containing no meat; and the administration at different times of pulsatilla, ferrum phosphoricum and macrotin.

The intimate connection between this last attack and the menstrual function is so patent that it does not need further comment. The point to be noted is the appearance for the first time of a cardiac involvement, and the special form of cardiac disease which in children means almost invariably, rheumatism; the condition which is as pathognomonic in them as articular lesions are in adults. Connect this with the history of the former attack, when there were developed as a sequel, various indefinite rheumatoid conditions, and with the fact of the parental rheumatic history, and we cannot overlook the inter-relationship in this case of the chorea and the rheumatic diathesis.

The mother was fifteen years of age when she began to menstruate. She has no remembrance of any suffering or other abnormal condition connected therewith. Her daughter began to menstruate at fourteen years of age, her choreic manifestion first developed before the completion of her tenth year. Back of the rheumatism is the strong possibility of a syphilitic inheritance.

ANTERIOR POLIOMYELITIS.—*Case.* Nina V., æt. two years, first appeared at our clinic August 2, 1895. At present both parents are well; there is, however, an acknowledged syphilitic history (paternal) dating back several years prior to the conception of our little patient.

As a baby Nina was bottle fed; at one year of age she had a severe attack of summer diarrhœa, previous to that time and since then up until July, 1895, she has seemed perfectly well.

In July she had a severe vomiting spell without any apparent cause, and with no other concomitants that the mother remembers; immediately following this spell of vomiting it was noticed that she had lost the use of the right leg, and soon afterward the left leg also was paralyzed. She began to walk when about eighteen months old, or six months before this attack; after the attack she made no effort to use the legs, and was not able to even creep.

General atrophy of both legs was noticeable at the time of her first visit. She was fretful, self-willed and perverse; an only child. Appetite good, evacuations from bladder and bowels *reported* normal in character and frequency. She is fed upon everything she desires. She was given phos. acid 6x. At our request she was placed in the hospital August 10, and remained with us two months. She is a poor sleeper, awakening often in the night with violent crying spells; bowels are constipated, stools dark brown; urine, strong smelling and foul, is voided at short intervals, no effort being used to control its evacuation; she perspires very freely about the face, but not elsewhere; her hands and feet are always cold; appetite is good. ℞ Silicea 6x.

During her stay in the hospital she improved in every way; at the end of two months (October 11, 1895) the records show that she could move her legs, that when placed upon her feet she could stand by holding onto something and that she could creep. She sleeps very much better, only awakening occasionally at night; the constipation is very much better, and the character of the urine is improved. The silicea was continued.

She has reported at the clinic from time to time since leaving the hospital, and has been gradually improving; her most marked difficulty apart from the paralysis has been the troublesome constipation.

October 2, 1896, she is able to walk with a little help. The muscles of the legs have a better tone, and are fairly well nourished; there does not seem to be any special group that have suffered more than the rest; the atrophy, however, is more noticeable in the thigh muscles than in those of the leg.

This case of poliomyelitis is a little unusual in its manner of onset, viz., freedom from fever, convulsion and the usual concomitants except the rather characteristic vomiting. The improvement has been unusually good, and promises well for the future. The paralysis has been symmetrical, complete for the affected limbs, and has shown no partiality for individual muscles or groups of muscles. The general health has not been seriously affected.

THE CLINIC ON GYNÆCOLOGICAL SURGERY.

SERVICE OF PROF. LUDLAM.*

REPORTED BY CORNELIA S. STETTLER, M. D.

THE SURGICAL IMPORTANCE OF DISCRIMINATING BETWEEN A SEXUAL AND A MENSTRUAL NEUROSIS.—*Case.* A girl aged nineteen, brought to the clinic by a relative, has the following clinical history: She received a common school education; was bright, and interested in her studies; learned intuitively, and has always been fond of books of the better sort; is of an emotional and religious nature, and had chorea, which lasted about six months, at her tenth year. Her menstruation has been regular for the most part, and not painful. When she was only five years old she contracted the habit of masturbation, and she is believed to be still addicted to it. Within the last three years she has changed greatly, is irritable, hysterical, fitful and full of fictitious stories as to her whereabouts and behavior. The moral nature is so blunted that she has lost all interest in herself and in family and social affairs; has uncontrollable spells of mental depression and melancholy which are so violent that she threatens suicide; is, so we are told, an inveterate liar, with a propensity to be profane "in the temper," and babyish when sympathy is extended to her. Of late she has complained of some pain in the abdomen, but no one knows if it is genuine. She has been "examined" by several doctors, one of whom said that she had appendicitis, another "thought it might be venereal disease," still another "kidney trouble," and a fourth advised the removal of the ovaries.

I have already examined this patient very carefully while she was under the influence of chloroform. She had never taken an anæsthetic before, and consequently I could not depend upon the diagnoses that had already been given. In her very nervous and excitable state one could not have recognized the objective symptoms without it, and her own story of the other symptoms and sensations could not be depended upon. I found the uterus normal in size, situation and mobility. The cervix was undeveloped, the vagina and the vulva were normal; there was no

*Continued from Vol. XVII., page 764.

sign of anything morbid with the hood of the clitoris, neither with the rectum; there were no caruncles at the mouth of the urethra; both ovaries were free and of the proper size, and there was no evidence bi-manually of any involvement of the tubes, or of intra-pelvic inflammation or exudation. Of these local conditions I am positively assured.

Under the circumstances my judgment is that it would be wrong to make any of the operations that pertain to gynæcology in this case; 1, because there is no local disease to warrant it; 2, the function of menstruation is not disordered to the extent that would make it an essential cause of the present symptoms, or justify us in precipitating the climacteric for their cure by limitation; 3, the demoralizing habit of self-abuse, which was contracted at the early age of five years, before puberty, has given a sexual bias to its clinical history that is independent of menstruation, and that would not be benefited by any kind of surgery; 4, this perversion of the sexual instinct, the seat of which is in the brain and not in the pelvis, is hysterical and neurotic to the last degree, and should be separated in our minds from such conditions as menstrual epilepsy and other disorders that depend upon ovarian lesions.

A lack of discrimination in cases of this kind may lead one to operate carelessly, and so to do more harm than good. If the reflex exciting cause is in the brain, that cause is surgically inaccessible. If the peculiar lesion of the brain substance has developed from a vicious habit that has been practiced for a dozen years already, neither a tubo-ovariotomy nor even a clitoridectomy would avail anything. You might just as well cut off her ears, or remove the vermiform appendix for that purpose. What this poor girl needs is moral and not surgical treatment, wholesome restraint among strangers, not at home, and the prudent counsel of an alienist who knows how to "minister to a mind diseased."

AN OBJECTION TO THE CATGUT SUTURE IN THE CLOSURE OF ABDOMINAL WOUNDS.—Wednesday, December 23. There are some things that you should unlearn, or qualify, as you proceed in your clinical course, and one of them is that too much is being claimed for the aseptic technique in the treatment and closure of wounds. What I mean is that certain authors and operators are too strenuous in the opinion that, if the proper conditions are rigorously met, union by first intention will invariably follow. Some of them go so far as to say that if pus shall form within or about a wound the surgeon is *always* at fault. But in reason this claim cannot be a just one, and it is quackish to pretend that there is no exception to the rule. In fact such exceptions do occur, and there are few surgeons of large experience, with hernia and abdominal operations generally who have not seen them. The surgical ritualists are all right providing they do not claim too much for their method of salvation.

Here is a case in point in which I made a laparotomy two weeks ago before one of the sub-classes. The aseptic toilet of the patient and of the peritoneum was perfect, and so was everything about the operation. The peritoneum and the muscular tissues were separately closed with sterile catgut. The patient did well, the external wound healed promptly throughout, and the skin sutures were taken on the ninth day. There was no temperature, no pain and no complaint whatever. The dressings were reapplied most carefully. Twelve hours later, however, she felt that they were wet, and when they were removed it was found that there had been quite a discharge of a thin, odorless pus from an opening at the middle of the wound. The discharge ceased very soon, and now, as you will readily observe, an inch or so of the wound is healing by granulation.

About ten years ago I began to use the catgut sutures in this way, not invariably but in exceptional cases, watching their effects, more especially in their relation to ventral hernia. Despite the greatest care to select only such cat-

gut as was believed to be aseptic, I soon observed that suppuration was more frequent than when the wound was closed with through and through sutures in the old style. And even now, when the methods of preparing that material are so perfected that it can be made absolutely sterile, there are some cases in which this nasty result will follow their employment.

It is claimed, and has been demonstrated by Poppert that the pus which comes from hidden aseptic catgut sutures is the result of a peculiar chemical change in them, and that the pus-product itself is sterile. (See page 60).

The absence of all signs of suppurative fever in this woman's case, and in others that I have seen, goes to prove that the pus formed in this way is not infective. All of my cases of this kind have recovered without any profound constitutional disturbance, and you may argue that that should be sufficient, but it does not satisfy the requirement. For, not only do we want our patients to get well promptly, but, whenever it is possible, we must avoid the occurrence of ventral hernia after an abdominal section. You should remember, therefore, that whether in wounds like this one, or in those which are vagino-plastic, a cicatrix that results from granulation is weak and will predispose the patient to further trouble.

My objection to the closure of the wound in a laparotomy with the lost fiddle-string suture is not that it is always, or very often harmful, but that, even with the utmost care, it will *sometimes* play the mischief with union by the first intention. I have used it very often in this and in other cases with excellent results, but a catgut suture that is out of my sight is not out of my mind—at least not until the risk of suppuration has passed.

CORRESPONDENCE.

SUPPURATION FROM STERILE CATGUT.

EDITOR OF THE CLINIQUE.

Dear Sir :—An interesting paper by Dr. Poppert, of Giessen (Germany), appeared recently in the *Deutsche Medizinische Wochenschrift.* I send you a free translation and extract :

ON SUPPURATION THROUGH STERILE CATGUT.—If we glance over the reports of surgeons on the dangers of catgut we are surprised at the diversity of opinions and results; there are very busy surgeons who have never seen any evil results, others again that have frequently witnessed wound infection, phlegmonous suppuration and even fatal sepsis from the use of catgut sutures; others report simple stitch abscesses or slight pericicatricial inflammations. * * *

Of course it is very difficult to interpret such accidents in the healing of wounds correctly, because many sources of infection obtain in every operation * * *

We would only be justified to accuse the catgut if we succeeded in demonstrating that it contained pyogenic germs. It is very remarkable that in isolated cases only bacteriological examination succeeded in revealing the presence of such germs and that most investigations made with pieces of the same material that had produced infection gave negative results. Numerous theories for this phenomenon have been adduced * * * none of them are, however, valid nor do they stand the test of experimental inquiry.

A series of cases of catgut suppuration that occurred in our clinic, induced the author to look into the matter more carefully; special methods of sterilization were employed, catgut was repeatedly extracted with ether, exposed for days to the action of corrosive sublimate solutions and of carbolic acid—with no result; every piece of this lot of catgut produced suppuration; other means of sterilization were employed, dry heat, heat under pressure and ultimately moist heat which, though it destroyed the usefulness of the catgut, still left the residue in a septic condition, as introduced into the abdominal cavity of an animal it produced suppuration.

Two explanations alone were possible, either a germ of colossal resisting powers finds a suitable nidus in catgut or the suppuration is due to some chemical substance. * * * The first possibility was easily excluded, and the proof can be furnished that the chemical substance contained in catgut may produce suppurative inflammation—due to chemotaxis. This finding is further corroborated by the fact that catgut suppuration is as a rule benign, i. e., it never develops a phlegmonous, progressive character (as bacterial inflammations do) it remains stationary and circumscribed; in the peritoneal cavity of animals a diffuse in-

flammation never took place, but the piece of sterile catgut was speedily encapsuled. * * *

It is impossible to say anything as yet about the chemical nature of the substance which produces these phenomena; at all events it cannot be one of the toxalbumins, as they are destroyed at 80° C., while our catgut had been exposed to a temperature of 130 ° C. and over.

The practical result of these investigations cannot be underestimated, as it gives a warning to the surgeon to be on his guard when using catgut, even though it be "sterile" as far as bacterial life is concerned. The following two questions remain to be answered:

1. Is there danger of an intoxication from the use of large quantities of such catgut?

2. *How can we protect ourselves against this non-bacterial catgut suppuration?*

The first question is to be answered in the negative, for while the human body does react with fever according to our experience, no other general disturbances sufficiently grave to cause anxiety, have ever been observed. Animal experiments coincide with these observations; large pieces of sterile catgut that were known to produce suppuration were introduced into the peritoneal cavity of rabbits. * * * Most of them survived and only a few perished probably from inanition produced by the digestive disturbances following the tying-down of numerous gut knuckles by the adhesions that had formed. As we have no known means at our disposal to free the catgut from the chemical substance mentioned above, we would really be forced to make animal experiments with every lot of catgut we use. This is of course impracticable, but the suggestion seems useful to employ a test piece of each new lot of catgut in the suture of some superficial wound in a case of minor surgery and to reject the whole lot if a stitch abscess (notwithstanding the greatest asepsis) occurs, and on the other hand, to use it with impunity if no such untoward complication arises. In all cases where absolute reliability of sutures and ligatures is required, especially in abdominal surgery, it will be best to abstain from the use of catgut altogether and to use silk instead; happily we can get along without catgut in abdominal work anyhow.

We have, therefore, reached the following conclusions:

1. The statement is false that our methods of sterilization as applied to catgut are deficient; catgut may, though it be perfectly free from germs, produce suppuration.

2. This suppuration is produced by chemical substances attached to the catgut and is, therefore, always of a benign character in contradistinction to true suppurative processes produced by the pyogenic cocci.

We are, therefore, no longer justified in making catgut responsible for grave phlegmonous inflammations or septicæmia, these mishaps must always be attributed to a neglect of aseptic precautions and accidental infection from without. * * * A. C. C.

Miscellaneous Items.

The section on Clinical Medicine, Dr. W. E. Taylor, Chairman, will report at the next meeting of the Clinical Society.——The Twentieth anniversary of that Society will be properly celebrated on Saturday evening, February 6.——The report of an interesting case of retinal detachment by Dr. Swan will appear in our next issue.——The *Pulse* says that Prof. Dunn has gone to Egypt to decide whether the vocal impediment of the sphinx is voluntary or not; and our senior student insists that "if anybody can make the old girl talk, he surely can do so."——The Second Annual Report of the Surgical Circle of the Hahnemann Hospital, Chicago, shows what sixty good, earnest women can do for a deserving charity when they set about it. Other flourishing circles will be heard from in due time.——A *propos* of this encouraging item is the fact that the earnings from pay patients in the hospital for 1896 exceeded $17,000.——Among the rare operations in the clinics very recently are a symphseotomy by Prof. Leavitt, an operation for the removal of the thyroid gland by Prof. Shears, and one for interstitial extra-uterine pregnaney by Prof. Ludlam.——Our friend, Dr. C. L. Thompson, of Muskegon, Mich., is the happy father of a son.——The report of our excellent and very energetic business manager, Dr. C. Gurnee Fellows, for Vol. XVI., shows a most encouraging and prosperous state of affairs for the CLINIQUE. Its growing list of subscribers and its greatly increased number of advertisers attest its popularity, its permanency and its real usefulness.—By an unfortunate oversight the following explanation was not appended to Fig. 1, page 3. The outline of the cardiac dullness is clearly shown: *mr–mr'*– line of propagation of the mitral murmur; *a o*, aortic obstructive murmur; *a r*, aortic regurgitant murmur. *x pa*, pulmonic accentuation; *c*, cicatrix.